SAMSUNG

DLP TV

Chassis : L64A(N_L3)_Robocop-1
Model : HLP4667WX/XAA (HL-P4667W)
HLP5067WX/XAA (HL-P5067W)
HLP5667WX/XAA (HL-P5667W)
HLP6167WX/XAA (HL-P6167W)

SERVICE Manual

DLP TV

CONTENTS

1. Specifications
2. Alignment and Adjustments
3. Troubleshooting
4. Exploded View and Parts List
5. Service Item
6. Block Diagrams
7. Schematic Diagrams

SAMSUNG

ELECTRONICS

This Service Manual is a property of Samsung Electronics Co.,Ltd.
Any unauthorized use of Manual can be punished under applicable
International and/or domestic law.

© Samsung Electronics Co., Ltd. **NOV. 2004**

Printed in Korea
AA82-01870A

1. Specifications

Model	HL-P4667W	HL-P5067W	HL-P5667W	HL-P6167W
Voltage	AC 120V			
Frequency of Operation	60Hz			
Power Consumption	230 Watts			
Dimensions (W x D x H)	43.07x13.35x32.05 inches 1094x339x814 mm	46.54x14.13x34.25 inches 1182x359x870 mm	52.36x15.59x37.89 inches 1330x396x962.5 mm	56.93x18.27x41.65 inches 1446x464x1058 mm
Weight	71.65lbs/32.5Kg	79.37lbs/36Kg	93.7lbs/42.5Kg	108.02lbs/49Kg

MEMO

2. Alignment and Adjustments

2-1 When Entering Service Mode:

2-1-1 Service Mode Entry Method

1. Turn off the power to make the SET STAND-BY mode.
2. In order to enter the Service Mode, Press "Mute" → "1" → "8" → "2" → "POWER" button on the Remote Control.
   In case entry into SERVICE MODE is unsuccessful, repeat the procedures above.

2-1-2 Initial DISPLAY State in times of SERVICE MODE Switch overs

2-1-2(A) OSD DISPLAY

Factory

DDP1011(L3)
DNIe
ADV7402(M)
ADV7402(S)
uPD64083
MSP4440
CCA
Cinema CCA
SP Actuator
CHECKSUM 0000
OPTION
SERVICE
T_RoboAUS0_00XX
200X_XX_XX
T-DTVUCOM5-00XX
T-RoboAUS1_00XX

2-1-2(B) BUTTONS OPERATIONS WITHIN SERVICE MODE

MENU	Full Menu Display / Move to Parent Menu
Direction keys ▲ / ▼	Item Selection by Moving the Cursor
Direction keys ◀ / ▶	Data Increase/Decrease for the Selected Item
Source	Cycles through the active input source that are connected to the unit

2-1-3 Details of Control

1) DDP1011

No	Item	Range	Default	Remark
1	V-Position	0~60	36	Screen upper and lower adjustment
2	H-Position	0~120	65	Screen left right adjustments
3	LAMP SYNC		Pulse(P)	Pulse(P), Pass(T)
4	INDEX DELAY	0~359	40	Index Delay adjustment
5	SEQ SELECT	0~15	5	Sequence Selection
6	V-FLIP	Normal/Flip	Normal	Vertical Flip Operation
7	H-FLIP	Normal/Flip	Normal	Horizontal Flip Operation
8	GAMMA	0~15	2	Gamma Table Selection
9	SLR	OFF/ON	OFF	SLR Function Selection
10	DMD_BIAS	B,C,D,E	E	DMD Bias bin vlotage selection
11	Lamp Boost	0~63	20	Lamp Boost value selection
12	Lamp Sync Delay	0~4095	0	Lamp Sync delay value selection
13	Test Pattern		0	Test Pattern Selection

2) DNIe

No	Item	Range	Default	Remark
1	Test Pattern		0	Test Pattern Selection
2	NR_MAX Y/C	0~255	48	Temporal NR Gain
3	NR_MIN Y/C	0~255	16	Temporal NR Gain
4	Core	0~15	4	NEOnDCE User Set Up
5	B_RATIO		12000	Low level information for the minimum value
6	BLACK_TILT	0~255	120	Black Stretch Area
7	W_RATIO		12000	High level information for the minimum value
8	WHITE_TILT	0~255	200	White Stretch Area
9	GAIN1X	0~63	30	Gain of horizontal high frequency region
10	GAIN1Y	0~63	20	Gain of vertical high frequency region
11	GAIN2X	0~63	17	Gain of horizontal middle frequency region
12	GAIN2Y	0~63	13	Gain of vertical middle frequency region
13	GAIN3X	0~63	11	Gain of horizontal low frequency region
14	NDON		ON	ON,OFF Background Noise Detection ON/OFF Switch
15	CORING_ON		ON	ON,OFFCoring On/Off
16	SCALE_R	0~255	160	Log Mapping Gain
17	WTE_CSC		YCCRGB	YCCRGB,YPPRGB
18	DITHER_MOD		0	1,2,3
19	RED_C_COEFF		128	Gain adjustment of the contrast for the Red signal
20	GRN_C_COEFF		128	Gain adjustment of the contrast for the Green signal
21	BLU_C_COEFF		128	Gain adjustment of the contrast for the Blue signal
22	RED_B_COEFF		128	Gain adjustment of the brightness for the Red signal
23	GRN_B_COEFF		128	Gain adjustment of the brightness for the Green signal
24	BLU_B_COEFF		128	Gain adjustment of the brightness for the Blue signal
25	Sub Contrast	0~150	120	Brightness adjustment for the high-light parts of the screen
26	Sub Brightness		230	Brightness adjustment for the low-light parts of the screen

3) ADV7402(M)

No	Item	Range	Default	Remark
1	AUTO COLOR			Auto Color function execution
2	SOG_SYNC_LEV			Embedded Sync Trigger Level
3	AGC_TIM			AGC Time Constant Selection
4	GAIN_MAN			ON,OFF Manual Gain Control Enable
5	A_GAIN			Manual Gain Value for Channel A
6	B_GAIN			Manual Gain Value for Channel B
7	C_GAIN			Manual Gain Value for Channel C
8	A_OFFSET			Channel A Offset
9	B_OFFSET			Channel B Offset
10	C_OFFSET			Channel C Offset
11	YPM	0~7	4	Y Peaking Filter Mode
12	YSFM	0~32	1	Y Shaping Filter Mode
13	WYSFM	0~32	19	Wide Band TY Shaping Filter Mode
14	CSFM		0	C Shaping Filter Mode
15	Contrast	0~255	128	Contrast Adjust
16	Brightness	0~255	128	Brightness Adjust
17	Hue	0~255	128	Hue Adjust
18	CKILLTHR	0~7	3	Colour Kill Threshold
19	SD_OFF_Cb	0~255	128	SD Offset Cb Channel
20	SD_OFF_Cr	0~255	128	SD Offset Cr Channel
21	SD_SAT_Cb	0~255	128	Saturation Cr Channel
22	SD_SAT_Cr	0~255	128	Saturation Cb Channel
23	IFFILTSEL	0~7	3	IF Filter Select
24	LTA	0~3	0	Luma Timing Adjust
25	CTA	0~7	2	Chroma Timing Adjust
26	DNR_TH	0~255	0	DNR Noise Threshold
27	DCT	0~3	0	Digital Clamp Timing
28	LAGC	0~7	0	Luma Automatic Gain Control
29	LAGT	0~3	3	Luma Automatic Gain Timing
30	LMG		1144	Luma Manual Gain
31	CAGC	0~7	2	Chroma Automatic Gain Control
32	CAGT	0~3	3	Chroma Automatic Gain Timing
33	CMG		2458	Chroma Manual Gain
34	CTI_AB_EN		ON	ON,OFF Chroma Transient Improvement Alpha Blend Enable
35	CTI_AB	0~3	3	Chroma Transient Improvement Alpha Blend

No	Item	Range	Default	Remark
36	CTI_C_TH	0~255	8	CTI Chroma Threshold
37	NSFSEL	0~3	0	Split Filter Selection NTSC
38	CTAPSN	0~3	2	Chroma Comb Taps NTSC
39	CCMN	0~7	0	Chroma Comb mode NTSC
40	YCMIN	0~7	0	
41	HSSLICE			
42	VSSLICE			
43	DLL_PH			
44	ST_NOISE		OxFFFF	

4) ADV7402(S)

No	Item	Range	Default	Remark
1	AUTO_COLOR			
2	SOG_SYNC_LEV	0~31	11	Embedded Sync Trigger Level
3	AGC_TIM	0~7	0	AGC Time Constant Selection
4	GAIN_MAN		ON	ON,OFF Manual Gain Control Enable
5	A_GAIN	0~1024	275	Manual Gain Value for Channel A
6	B_GAIN	0~1024	287	Manual Gain Value for Channel B
7	C_GAIN	0~1024	287	Manual Gain Value for Channel C
8	A_OFFSET	0~1024	0	Channel A Offset
9	B_OFFSET	0~1024	512	Channel B Offset
10	C_OFFSET	0~1024	512	Channel C Offset
11	YPM	0~7	4	Y Peaking Filter Mode
12	YSFM	0~32	1	Y Shaping Filter Mode
13	WYSFM	0~32	19	Wide Band TY Shaping Filter Mode
14	CSFM	(0~7)	0	C Shaping Filter Mode
15	Contrast	0~255	128	Contrast Adjust
16	Brightness	0~255	126	Brightness Adjust
17	Hue	0~255	128	Hue Adjust
18	CKILLTHR	0~7	3	Colour Kill Threshold
19	SD_OFF_Cb	0~255	128	SD Offset Cb Channel
20	SD_OFF_Cr	0~255	128	SD Offset Cr Channel
21	SD_SAT_Cb	0~255	128	Saturation Cr Channel
22	SD_SAT_Cr	0~255	128	Saturation Cb Channel
23	IFFILTSEL	0~7	3	IF Filter Select
24	LTA	0~3	0	Luma Timing Adjust
25	CTA	0~7	3	Chroma Timing Adjust
26	DNR_TH	0~255	0	DNR Noise Threshold
27	DCT	0~3	0	Digital Clamp Timing
28	LAGC	0~7	0	Luma Automatic Gain Control
29	LAGT	0~3	3	Luma Automatic Gain Timing
30	LMG	0~4096	1064	Luma Manual Gain
31	CAGC	0~7(0~3)	2	Chroma Automatic Gain Control
32	CAGT	0~3	3	Chroma Automatic Gain Timing
33	CMG	0~4096	2458	Chroma Manual Gain
34	CTI_AB_EN		ON	ON,OFF Chroma Transient Improvement Alpha Blend Enable
35	CTI_AB	0~3	3	Chroma Transient Improvement Alpha Blend

No	Item	Range	Default	Remark
36	CTI_C_TH	0~255	8	CTI Chroma Threshold
37	NSFSEL	0~3	0	Split Filter Selection NTSC
38	CTAPSN	0~3	2	Chroma Comb Taps NTSC
39	CCMN	0~7	0	Chroma Comb mode NTSC
40	YCMIN	0~7	0	
41	HSSLICE	0~3	1	
42	VSSLICE	0~3	3	
43	DLL_PH			
44	ST_NOISE		OxFFFF	

5) Upd64083

No	Item	Range	Default	Remark
1	DYCOR	0~15	2	DY detection coring level
2	DYGAIN	0~15	9	DY detection gain
3	DCCOR	0~15	3	DC detection coring level
4	DCGAIN	0~15	6	DC detection gain
5	YHCOR	0~3	1	Y output high frequency component coring
6	CDELAY	0~3	4	C signal output delay
7	YPFT		3	YPFT adjustment
8	YPFG		8	YPFG adjustment

6) MSP4440

No	Item	Range	Default	Remark
1	MDB Effect	0~127	56	Micronas Dynamic Bass
2	SRS Dialog	0~127	64	SRS Dialog clarity adjustment
3	PLL			Pilot low adjustment
4	PLH			Pilot high adjustment

7) CCA

No	Item	Range	Default	Remark
1	CCA	On/Off	On	CCA On/Off Selection
2	Red-x	0~32768	640	Red-x adjustment
3	Red-y	0~32768	340	Red-y adjustment
4	Red-Y	0~32768	86	Red-Y adjustment
5	Green-x	0~32768	300	Green-x adjustment
6	Green-y	0~32768	620	Green-y adjustment
7	Green-Y	0~32768	300	Green-Y adjustment
8	Blue-x	0~32768	150	Blue-x adjustment
9	Blue-y	0~32768	60	Blue-y adjustment
10	Blue-Y	0~32768	53	Blue-Y adjustment
11	White-x	0~32768	291	White-x adjustment
12	White-y	0~32768	300	White-y adjustment
13	White-Y	0~32768	439	WHite_Y adjustment
14	WB Spread			Spread CCA value to all mode
15	Move HDMI			Move to the HDMI Mode
16	DRedX		640	Target Red X value for CCA
17	DRedY		330	Target Red Y value for CCA
18	DGreenX		300	Target Green X value for CCA
19	DGreenY		620	Target Green Y value for CCA
20	DBlueX		150	Target Blue X value for CCA
21	DBlueY		60	Target Blue Y value for CCA
22	DCyanX		205	Target Cyan X value for CCA
23	DCyanY		270	Target Cyan Y value for CCA
24	DMagentaX		290	Target Magenta X value for CCA
25	DMagentaY		140	Target Magenta Y value for CCA
26	DYellowX		425	Target Yellow X value for CCA
27	DYellowY		515	Target Yellow Y value for CCA
28	D_White_X		291	Target White X value for CCA
29	D_White_Y		300	Target White Y value for CCA
30	DTV/HDMI		0	

8) Cinema CCA

No	Item	Range	Default	Remark
1	DRedX		640	Target Red X value for CCA
2	DRedY		340	Target Red Y value for CCA
3	DGreenX		300	Target Green X value for CCA
4	DGreenY		620	Target Green Y value for CCA
5	DBlueX		150	Target Blue X value for CCA
6	DBlueY		60	Target Blue Y value for CCA
7	DCyanX		205	Target Cyan X value for CCA
8	DCyanY		270	Target Cyan Y value for CCA
9	DMagentaX		290	Target Magenta X value for CCA
10	DMagentaY		140	Target Magenta Y value for CCA
11	DYellowX		425	Target Yellow X value for CCA
12	DYellowY		515	Target Yellow Y value for CCA
13	D_White_X		313	Target White X value for CCA
14	D_White_Y		329	Target White Y value for CCA

9) SP ACTUATOR

No	Item	Range	Default	Remark
1	Actuator Gain	0~175	115	Actuator Gain adjustment
2	Actuator On/Off		On	Actuator On/Off selection

10) CHECKSUM 0000

Excute Checksum calcuation

11) OPTION

No	Item	Range	Default	Remark
1	Lamp Clear			Initialize lamp using time. Lamp Life is set to zero
2	User Reset			All setting is back to the default
3	WB Reset		OFF	Initialize the White Balance value
4	EER Reset			Clear the EEPROM
5	Lamp Life		0h	Time for which the lamp has been used
6	AUTO POWER	ON/OFF	ON	The sets turns on automatically when the power cord is plugged in
7	DNIe DEMO	ON/OFF	ON	DNIe Demo function selection
8	Lamp Control		Dynamic	Dynamic, Always
9	MUTE TIME		600ms	Time which the screen will be black while switching channels
10	EDID WRITE			
11	DELAY MOD	ON/OFF	OFF	Sound Delay Module ON/OFF selection
12	DBG/ANY SEL	Debug/AnyNet		Select the use of the Aynet jack
13	GEM/GEMIR SEL	GemIR/Gemstar		Not used
14	226 TEST PATT			Xilleon 226 test pattern
15	Set Default Data			Initialize Service Data
16	DDC protection		OFF	DDC write ON/OFF selection
17	LNA Default		AUTO	LNA setting OFF/Auto selection
18	PROTECT		ON	Protection ON/OFF selection
19	WATCH DOG			Watch Dog ON/OFF selection
20	WD COUNT		0	Count for Watch Dog event
21	Auto Pgm Range		8	Not used

12) SERVICE

No	Item	Range	Default	Remark
1	V-Position		36	Screen upper and lower adjustment
2	H-Position		65	Screen left right adjustment
3	LAMP SYNC		Pulse(P)	
4	Actuator Gain		115	Actuator Gain adjustment
5	INDEX DELAY		40	Index delay adjustment
6	AUTO COLOR			Auto Color function execution
7	CCA			CCA menu
8	Lamp Clear			Initialize Lamp using time
9	User Reset			All setting is back to the default

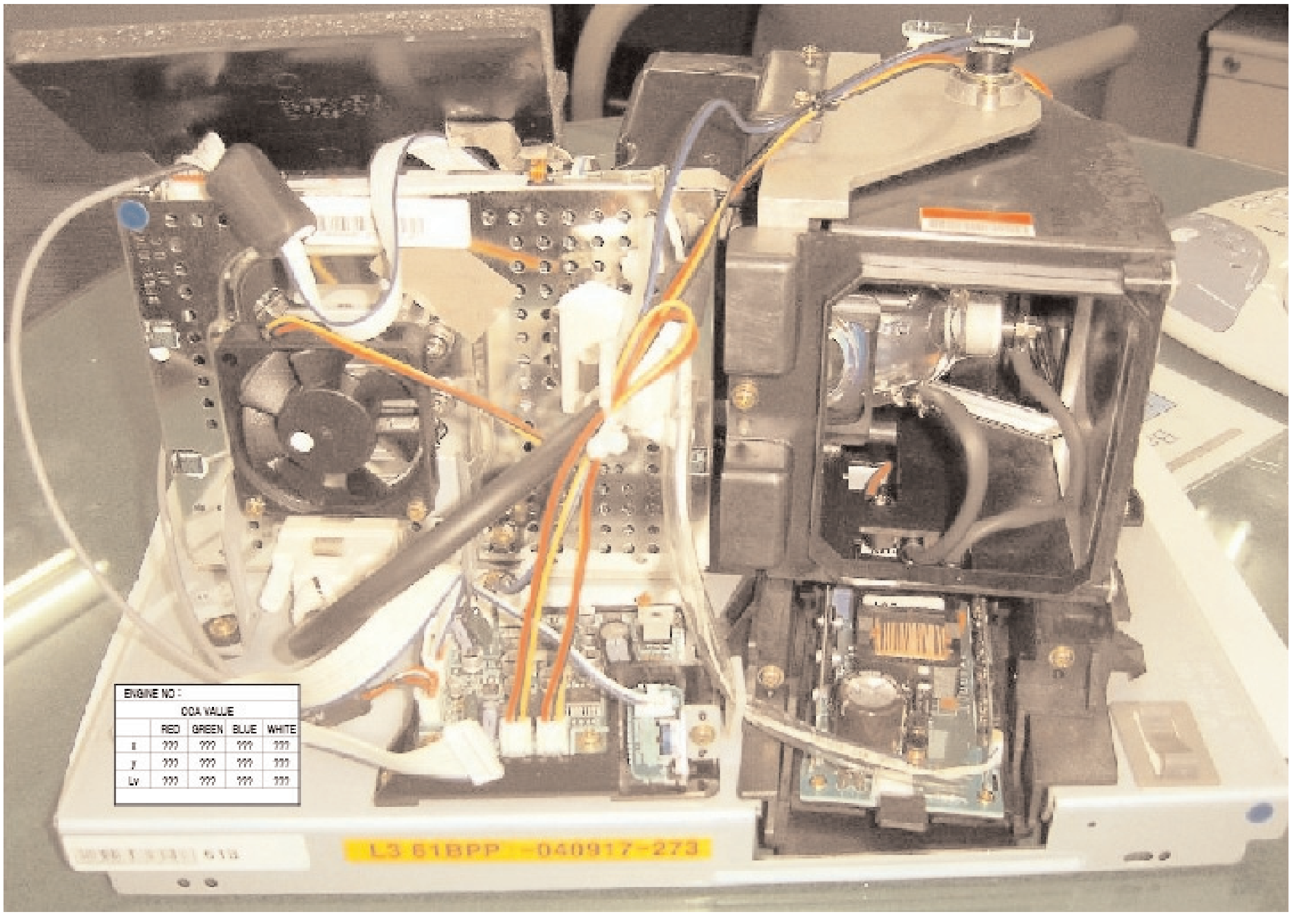
2-2 CCA Adjustment Service Methods

CCA Adjustment is needed after changing a light engine or digital board

2-2-1 CCA

In DLP TV, even the same RGB color may differ depending on the light engine. CCA (Color Coordinate Adjustment) corrects the color to achieve the color accuracy. CCA performs color correction after measuring and inputting the current light engine's data on actual color coordinates for displayed Red, Green, Blue, and White color patterns, using a color coordinate measuring equipment. At this moment, color correction is performed on the basis of previously inputted Desired Color Coordinates and Measured Color Coordinates. Measured Data on Service Engine's color coordinates is presented on the CCA label. Input the label values to perform CCA color correction.

2-2-2 Condition of the CCA Label upon Receipt of the Service Engine



ENGINE NO :

CCA VALUE

	RED	GREEN	BLUE	WHITE
x	???	???	???	???
y	???	???	???	???
Lv	???	???	???	???

* "CCA LABEL" describes the measured color coordinates on the light engine.

2-2-3 CCAService Procedures

To execute CCA adjustment , perform the following steps:

1. Turn off the power to make the SET STAND-BY mode.
2. In order to enter the Service Mode, Press "Mute" → "1” → "8" → "2" → "POWER" button on the Remote Control.
3. Select FACTORY > SERVICE > CCA mode on the SET.
4. Switch the CCA OFF.
5. Input the CCA basic engine data to the SET.
6. Input the D-White -x, y values in the coordinates per destination. (if necessary)
7. Select WB SPREAD, then press Enter to activate the WB Spread SET ensuring that you adjust until you get the OK sign. After adjusting, exit Factory Mode.
8. When the adjustment is complete, check the picture quality.

CCA Menu in FACTORY Mode

CCA ON/OFF
Red - x : ???
Red - y : ???
Red - Y : ???
Green - x : ???
Green - y : ???
Green - Y : ???
Blue - x : ???
Blue - y : ???
Blue - Y : ???
White - x : ???
White - y : ???
White - Y : ???
WB SPREAD
Move HDMI

* Attention

Performing CCA is independent on current display's resolution and input signal type if you don't measure color coordinates data. Measuring color coordinates data requires specific equipment not possessed by service personnel, what makes performing manual adjustment impossible. Adjusting CCA is applied to all the signal mode. Don't change Desired value because it will be hamful to the color of the SET.

2-3 INDEX DELAY Adjustment

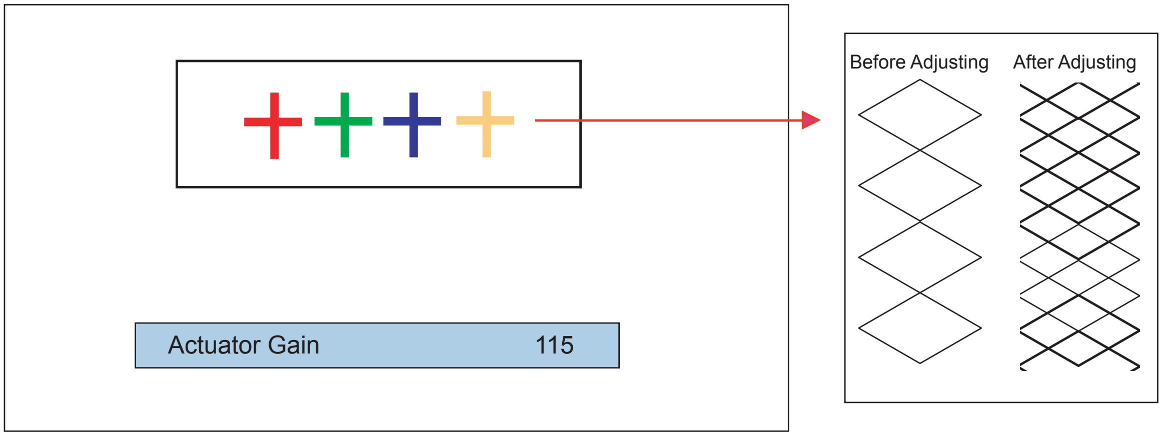
1. Turn off the power to make the SET STAND-BY mode.
2. In order to enter the Service Mode, Press "Mute" → "1” → "8" → "2" → "POWER" button on the Remote Control.
3. Select "Service" on the first display of the Service mode menu.
4. Press the ▲▼ (Up or Down) button to move to INDEX DELAY, then press ENTER to select.
5. The INDEX DELAY setup screen (with a red bar at the bottom of the screen) will be displayed.
6. Press the ◀▶ (Left of Right) button to check the red color at the bottom of the screen at its minimum and maximum values of changing from red to magenta, then adjust to the mean value.

2-4 Projected Image Adjustment

1. Turn off the power to make the SET STAND-BY mode.
2. In order to enter the Service Mode, Press "Mute" → "1” → "8" → "2" → "POWER" button on the Remote Control.
3. Select "Service" on the first display of the Service mode menu.
4. Select the V-position for vertical positioning and H-position for horizontal positioning by using the ▲▼(up, down) buttons.
   ※ Do not set the V-position value to 34 or 35.
   (Setting to these values will cause horizontal lines on the right side of the screen.)

2-5 ACTUATOR GAIN Adjustment

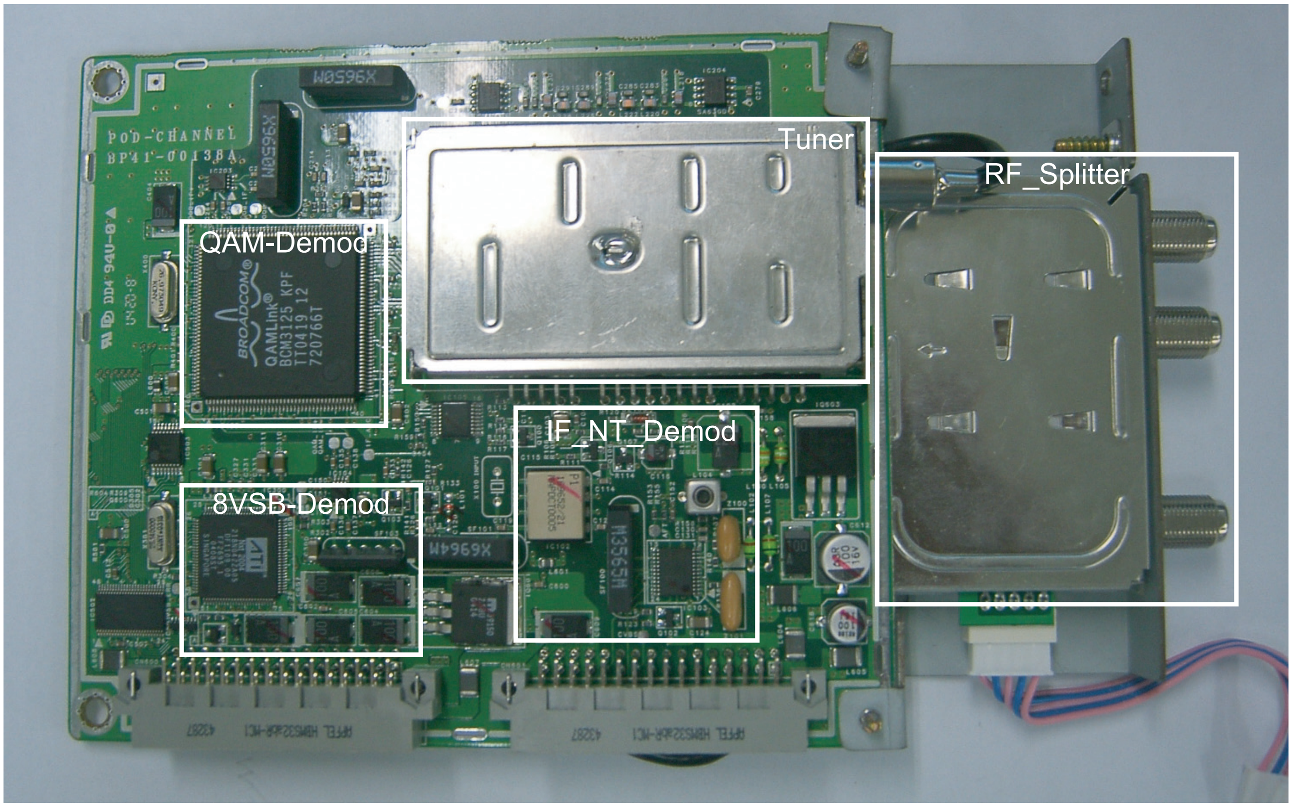
1. Before Adjustment
   1) Turn off the power to make the SET STAND-BY mode.
   2) In order to enter the Service Mode, Press "Mute" → "1” → "8" → "2" → "POWER" button on the Remote Control.
   3) Select "Service" on the first display of the Service mode menu.
   4) Press the ▲ ▼(Up or Down) button to move to ACTUATOR GAIN, then press ENTER to select.


Actuator Gain 115

2. Making Adjustments
   1) As shown in the picture above, change the actuator values to eliminate saw tooth shapes.
      - To fine tune, increase the data value ensuring that you get the center between the starting and ending points of the disappearing saw tooth shape.

2-6 POD Channel Board

2-6-1 Assy POD Channel Board



- * Analog Channel Tuning
- * Digital(VSB, QAM) Channel Tuning
- * 3wire(CLK,Data,Select) control in method tuner control

CN600

Transporting video stream

Pin Name	PIN No.		Pin Name
S_5V	1	32	NRESET
GND	2	31	GND
QAM_SCL	3	30	VSB_SDA
QAM_SDA	4	29	VSB_SCL
GND	5	28	CH_RST
DRX	6	27	CRX
QTX	7	26	ETX
ITX	8	25	CTX
GND	9	24	GND
TS_CLK	10	23	TS_SEL
TS_SYNC	11	22	TS_VAL
TS_D7	12	21	TS_D6
TS_D5	13	20	TS_D4
TS_D3	14	19	TS_D2
TS_D1	15	18	TS_D0
D3.3V	16	17	GND

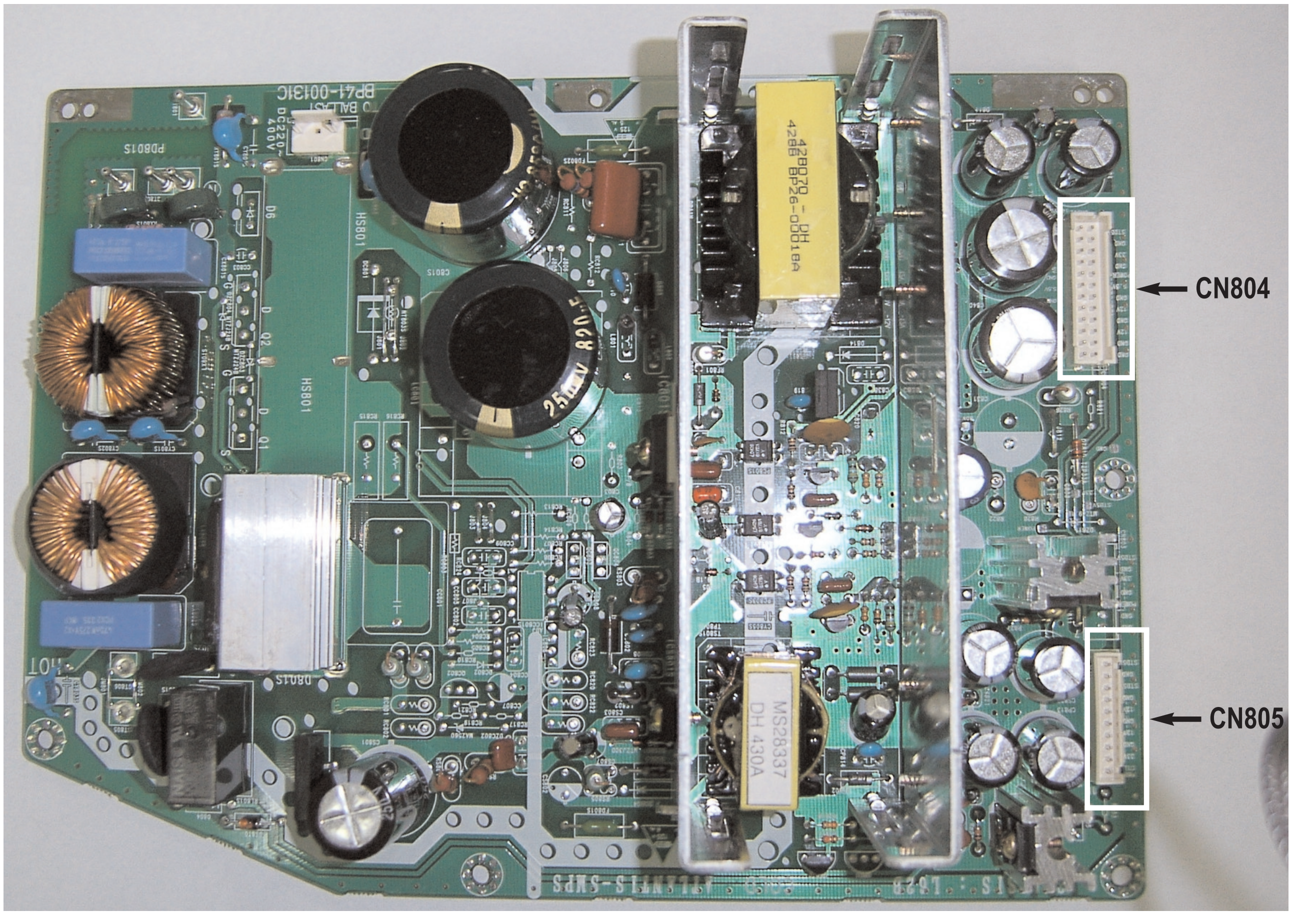
CN601

Connecting the control signal between Digital & Channel board

Pin Name	PIN No.		Pin Name
S_A30V	1	32	GND
GND	2	31	GND
S_A9V	3	30	TU_CLK
GND	4	29	TU_EN
GND	5	28	TU_DAT
S_A6.5V	6	27	GND
GND	7	26	XTAL_ON_OFF
NTSC_AFT	8	25	GND
GND	9	24	GND
CVBS	10	23	Crystal_CTL
GND	11	22	TU_AGC
SIF	12	21	GND
GND	13	20	GND
GND	14	19	GND
GND	15	18	GND
GND	16	17	GND

2-7 ASSY PCB POWER Service Manual

2-7-1 Assy Power Board



⋆ Supply DC Voltage

CN805
Connecting Power to Analog Board

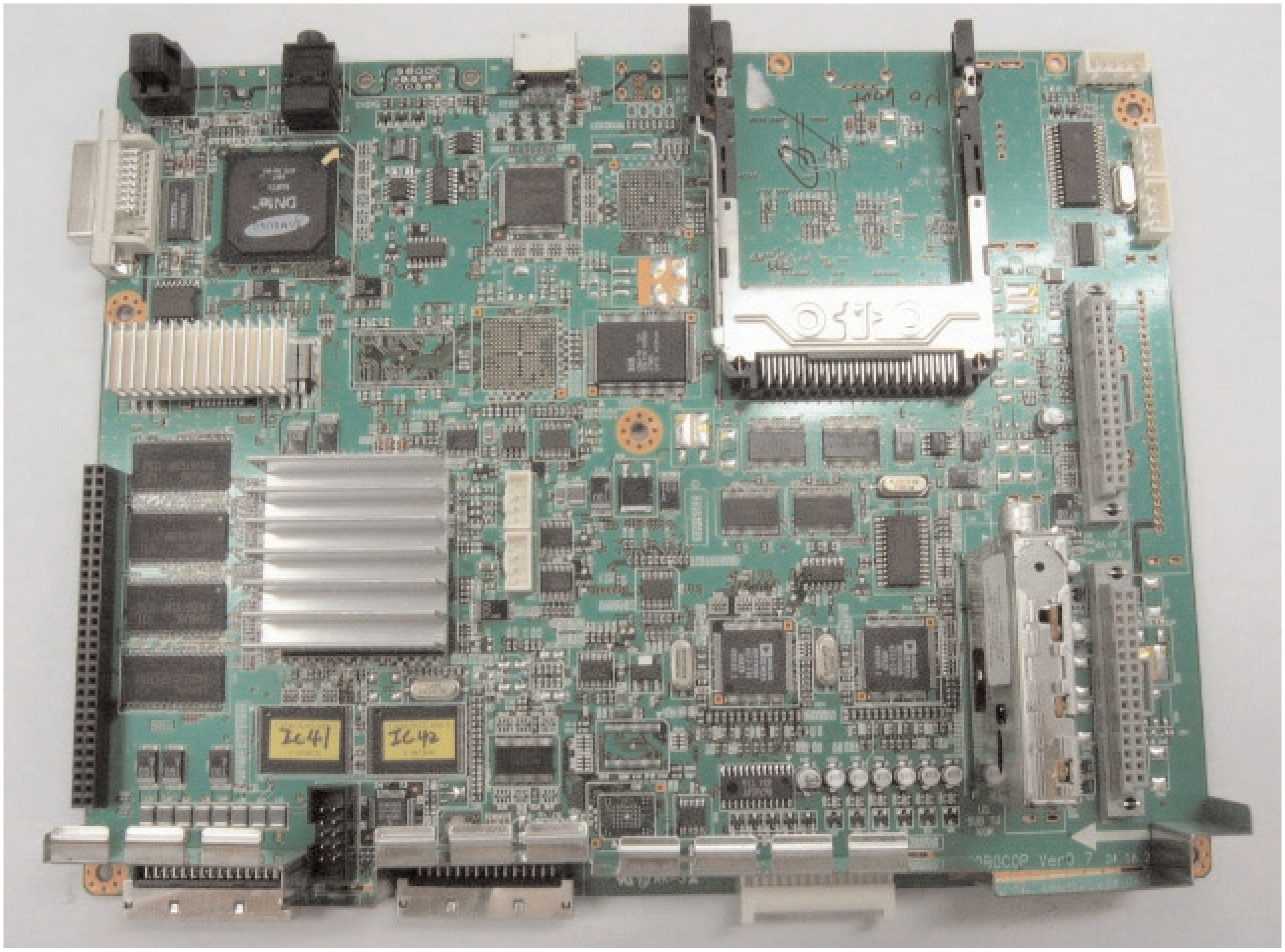
Pin Name	PIN No.
STD 5V	1
GND	2
STD 5V	3
GND	4
12VA	5
GND	6
12VA	7
GND	8
33VA	9
POD-SW	10

CN804
Connecting Power to Analog Board

Pin Name	PIN No.		Pin Name
STD 5V	1	2	S-MUTE
GND	3	4	S14.5V
33V	5	6	GND
GND	7	8	S14.5V
POWER-SW	9	10	GND
5.5VB	11	12	5.5VB
GND	13	14	GND
12VB	15	16	12VB
GND	17	18	GND
12VB	19	20	12VB
GND	21	22	GND
GND	23	24	80VB

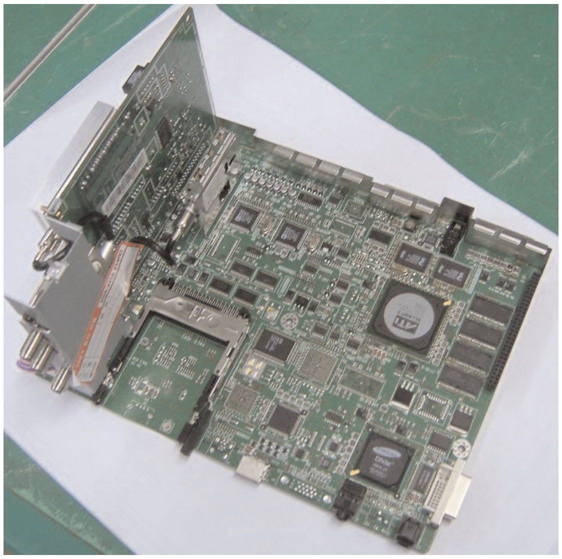
2-8 ASSY PCB DIGITAL Service Manual

2-8-1 Assy Digital Board



RS232 - S/W Upgrarde and Anynet
HDMI - A/V Input

- * Microprocessor (Generates turn on signal to power board)
- * Monitor LED's
- * All Digital Video Processing
- * Sensor / Switch Controls
- * OSD / Menu
- * Reset Switch
- * Connected with POD channel Board. See the right picture.



Digital Board Connector Pin

CN16

Connecting the control signal between Digital & Analog Board

Pin Name	PIN No.		Pin Name
I2SWS_OUTA	1	2	TxDM
I2SSD_OUTA	3	4	RxDM
I2SCLK_OUTA	5	6	GND
GND	7	8	SDA_M5
SDA_PANNEL	9	10	SCL_M5
SCL_PANNEL	11	12	NT_I2S_SCLK
GND	13	14	NT_I2S_LRCLK
NT_I2S_DATA	15	16	USB_SW_UP_P
nMICOM_INIT	17	18	USB_SW_UP_N
nRESET	19	20	S_nRESET
ANALOG_nRST	21	22	DDP_READY
MD_nRESET	23	24	PWRGOOD
LAMP_ERROR	25	26	DTV_Lt
DLP_SYNCVAL	27	28	DTV_Rt
GND	29	30	GND

CN17

Connecting Power to the Digital Board

Pin Name	PIN No.		Pin Name
MD3.3V	1	2	MD3.3V
MD3.3V	3	4	D3.3V
GND	5	6	D3.3V
GND	7	8	GND
STB_6.5V	9	10	GND
GND	11	12	GND
STB_9V	13	14	D5.7V
GND	15	16	D5.7V
STB_30V	17	18	GND
STB_5V	19	20	GND
5VA	21	22	D12V
GND	23	24	GND
GND	25	26	D9V
33V	27	28	GND

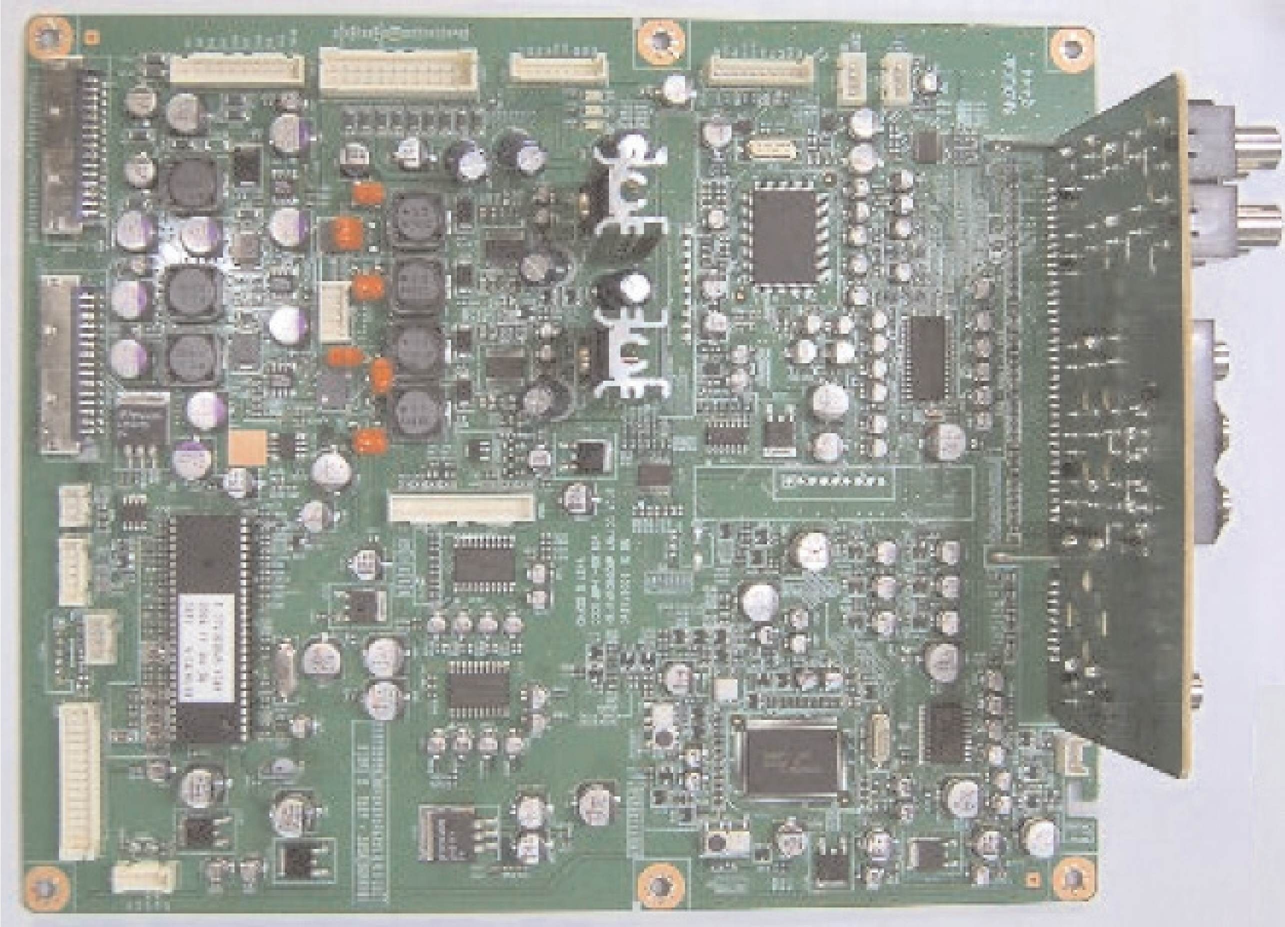
CN21

Connecting the audio / video signal from the rear input terminal

Pin Name	PIN No.		Pin Name
MAIN_Y	1	2	GND
MAIN_C	3	4	GND
SUB_Y	5	6	GND
SUB_C	7	8	GND
DTV_CVBS	9	10	GND
COMP1_Y	11	12	GND
COMP1_Pb	13	14	GND
COMP1_Pr	15	16	GND
COMP2_Y	17	18	GND
COMP2_Pb	19	20	GND
COMP2_PR	21	22	GND
M_CVBS	23	24	GND
M_SIF	25	26	GND
S_CVBS	27	28	GND
S_SIF	29	30	GND

2-9 ASSY PCB ANALOG Service Manual

2-9-1 Assy Analog Board



* Distributes supply voltage from the Power Board to Digital Board
* Transfers Turn-On Command from Digital Board to Power Board
* Encompasses the majority of the Audio Circuit
* Analog Video Switching / Processing
* Analog AudioSwitching / Processing
* 3D Comb Processing

Analog Board Pin Assignment

CN275

Connecting USB cable for Software Upgrade

Pin Name	PIN No.
GND	1
5VB	2
USB-NEG	3
USB-POS	4
GND	5

CN250

For Debugging

Pin Name	PIN No.
SDA-DMD	1
SCL-DMD	2
GND	3
5VA	4

CN266

Connecting Power and the Control Signal to the Actuator Protection Board

Pin Name	PIN No.
GND	1
12VB	2
GND	3
SDA-M1	4
SCL-M1	5
GND	6
5VA	7
GND	8
70VB	9
GND	10

CN249

For Debugging

Pin Name	PIN No.
SDA-A	1
SCL-A	2
GND	3
5VA	4

CN259

Connecting Power to the DMD

Pin Name	PIN No.
5VB	1
5VB	2
GND	3
GND	4
12VB	5
12VB	6
GND	7
GND	8
GND	9

CN268

Connecting Power to the Digital Board

Pin Name	PIN No.		Pin Name
3.3V-ATI	1	2	3.3V-ATI
3.3VB-D	3	4	3.3V-ATI
3.3VB-D	5	6	GND
GND	7	8	GND
GND	9	10	6.5VA-D
GND	11	12	GND
5.7VB	13	14	9VA
5.7VB	15	16	GND
GND	17	18	30VA
GND	19	20	5VA
12VB	21	22	5VA
GND	23	24	GND
9VB	25	26	GND
GND	27	28	33VB
GND	29	30	GND

CN265

Connecting the IR signal

Pin Name	PIN No.
IR	1
GND	2
5VA	3

CN261

Connecting front LED indicators

Pin Name	PIN No.
5VA	1
KEY-PWR	2
GND	3
LED1	4
LED2	5
LED3	6

CN273

Connecting Side Buttons

Pin Name	PIN No.
GND	1
KEY1	2
KEY2	3
GND	4

CN223

Transmitting Video Signal from Side Terminal

Pin Name	PIN No.
SIDE-Y	1
SIDE-C	2
GND	3
SIDE-V	4
GND	5
SIDE-L	6
GND	7
SIDE-R	8
GND	9
SIDE-SDET	10
SIDE-VDET	11

CN228

Connecting and transmitting Audio signal to Speaker

Pin Name	PIN No.
-L-OUT	1
+L-OUT	2
-R-OUT	3
+R-OUT	4

CN274

Connecting the Power and Control Signal to the POD Fan

Pin Name	PIN No.
FAN-ERROR	1
GND	2
8VA-FNA	3

CN257

Connecting the audio / video signal from the rear input terminal

Pin Name	PIN No.		Pin Name
MAIN_Y	1	2	GND
MAIN_C	3	4	GND
SUB_Y_V	5	6	GND
SUB_C	7	8	GND
DTV_CVBS	9	10	GND
COMP1_Y	11	12	GND
COMP1_Pb	13	14	GND
COMP1_Pr	15	16	GND
COMP2_Y	17	18	GND
COMP2_Pb	19	20	GND
COMP2_Pr	21	22	GND
MTNR_CVBS	23	24	GND
MTNR_SIF	25	26	GND
STNR_CVBS	27	28	GND
STNR_SIF	29	30	GND

CN258

Connecting the control signal between Digital and Analog

Pin Name	PIN No.		Pin Name
TxDM	1	2	ATI-I2S-WS
RxDM	3	4	ATI-I2S-DATA
GND	5	6	ATI-I2S-CLK
SDA_A	7	8	GND
SCL_A	9	10	SDA_DMD
I2SCLK	11	12	SCL_DMD
I2S_WS	13	14	GND
USB_POS	15	16	I2S_DATA
USB_NEG	17	18	CPU_INIT
SOUND_RESET	19	20	CPU_RESET
DDP_READY	21	22	RESET_D
PWRGOOD	23	24	MD_nRESET
DTV_L	25	26	LAMP_ERROR
DTV_R	27	28	DLP_SYNCVAL
GND	29	30	GND

CN267

Connecting Power

Pin Name	PIN No.		Pin Name
5VA	1	2	POWER-MUTE
GND	3	4	S16VB
33VB	5	6	GND
GND	7	8	S16VB
POWER-SW	9	10	GND
5.7VB	11	12	5.7VB
GND	13	14	GND
12VB	15	16	12VB
GND	17	18	GND
12VB	19	20	12VB
GND	21	22	GND
GND	23	24	70VB

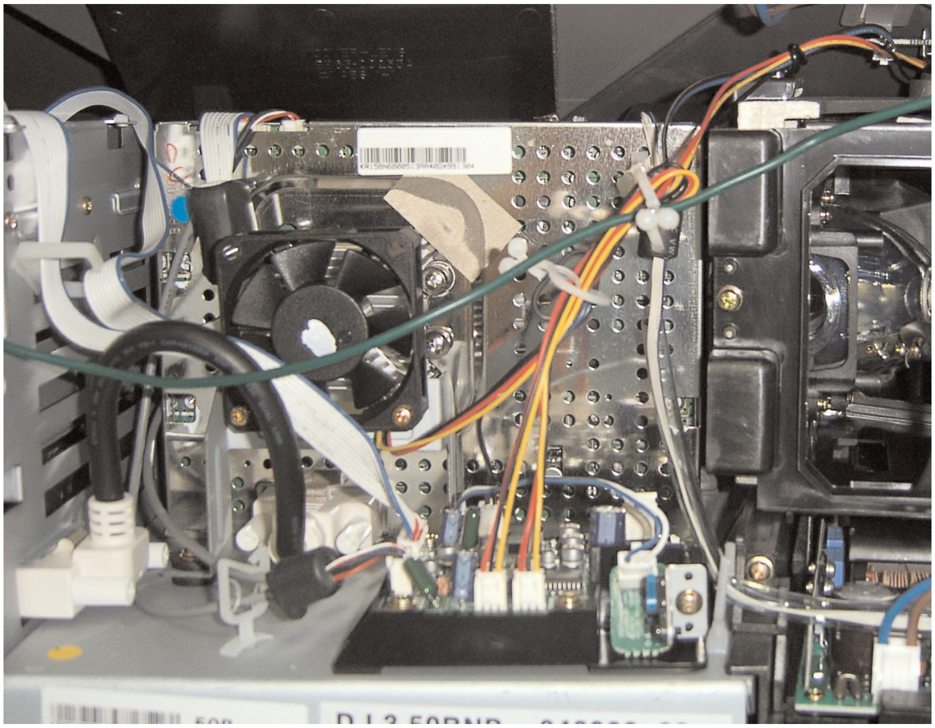
CN270

Connecting Power

Pin Name	PIN No.
5VA	1
GND	2
5VA	3
GND	4
12VA	5
GND	6
12VA	7
GND	8
30VA	9
POD-SW	10

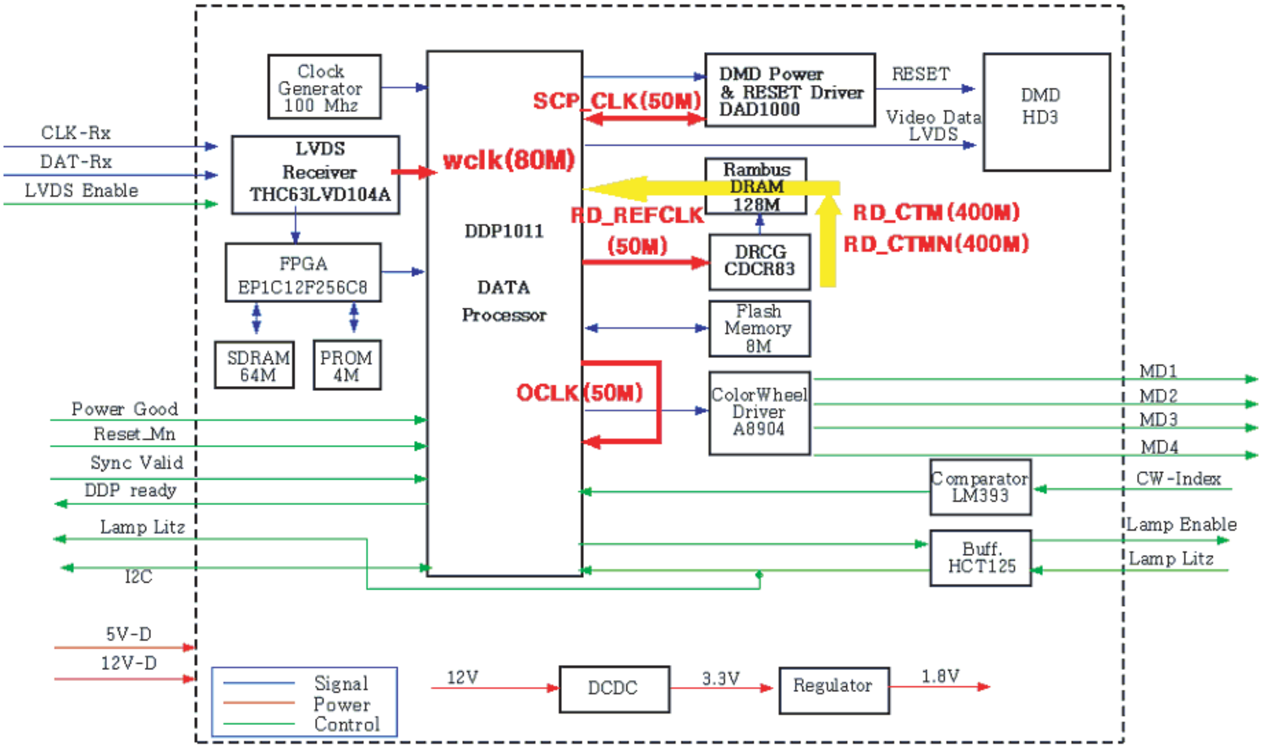
2-10 ASSY PCB DMD Service Manual

2-10-1 Assy DMD Board



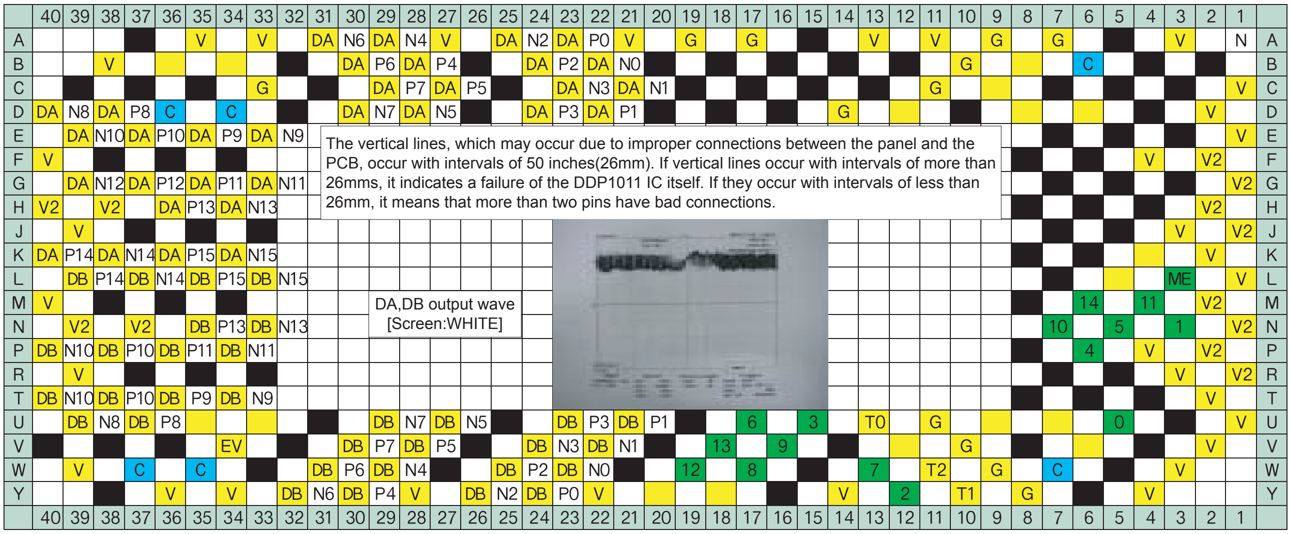
* Control Lamp Turn-On
* Powers Color Wheel Motor
* Drives DMD Panel
* Sensor Control
* Attached to optical Engine

2-10-2 Block Diagram


Clock Generator 100 Mhz
CLK-Rx
DAT-Rx
LVDS Enable
LVDS Receiver THC63LVD104A
FPGA EP1C12F256C8
SDRAM 64M
PROM 4M
SCP_CLK(50M)
wclk(80M)
DDP1011
DATA Processor
RD_REFCLK (50M)
OCLK(50M)
DMD Power & RESET Driver DAD1000
RESET
Video Data LVDS
DMD HD3
Rambus DRAM 128M
RD_CTM(400M)
RD_CTMN(400M)
DRCG CDCR83
Flash Memory 8M
ColorWheel Driver A8904
MD1
MD2
MD3
MD4
Comparator LM393
CW-Index
Lamp Enable
Buff. HCT125
Lamp Litz
Power Good
Reset_Mn
Sync Valid
DDP ready
Lamp Litz
I2C
5V-D
12V-D
Signal
Power
Control
12V
DCDC
3.3V
Regulator
1.8V

2-10-3 DMD Panel Pin Terminal Characteristics Diagram

※ Remove the heat sink attached to the DMD Board and tighten the screws in four places and then inspect the characteristics of each pin terminal.



	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
A				■		V		V		DA	N6	DA	N4	V		DA	N2	DA	P0	V		G		G		■		V		V		G		G		■		V		N	A
B			V		🟨		🟨		■		DA	P6	DA	P4	■		DA	P2	DA	N0	■		■		■		■		■		G		🟨		C		■		■		B
C		■		■		■		G		■		DA	P7	DA	P5	■		DA	N3	DA	N1	■		■		■		■		G		🟨		■		■		■		V	C
D	DA	N8	DA	P8	C		C		■		DA	N7	DA	N5	■		DA	P3	DA	P1	■		■		■		G		🟨		■		🟨		🟨		■		V		D
E		DA	N10	DA	P10	DA	P9	DA	N9																									■		■		■		V	E
F	V		■		■		■																										■		■		V		V2		F
G		DA	N12	DA	P12	DA	P11	DA	N11																									■		■		■		V2	G
H	V2		V2		DA	P13	DA	N13																									■		■		■		V2		H
J		V		■		■		■																										■		■		V		V2	J
K	DA	P14	DA	N14	DA	P15	DA	N15																									■		■		🟨		V		K
L		DB	P14	DB	N14	DB	P15	DB	N15																									■		🟨		ME		V	L
M	V		■		■		■																										■		14		11		V2		M
N		V2		V2		DB	P13	DB	N13																									10		5		1		V2	N
P	DB	N10	DB	P10	DB	P11	DB	N11																									■		4		V		V2		P
R		V		■		■		■																										■		■		V		V2	R
T	DB	N10	DB	P10	DB	P9	DB	N9																									■		■		■		V		T
U		DB	N8	DB	P8	🟨		🟨		■		DB	N7	DB	N5	■		DB	P3	DB	P1	■		6		3		T0		G		🟨		🟨		0		■		V	U
V	■		■		■		EV		■		DB	P7	DB	P5	■		DB	N3	DB	N1	■		13		9		■		🟨		G		■		🟨		■		V		V
W		V		C		C		■		DB	P6	DB	N4	■		DB	P2	DB	N0	■		12		8		■		7		T2		G		C		■		V			W
Y			■		V		V		DB	N6	DB	P4	V		DB	N2	DB	P0	V		🟨		🟨		■		V		2		T1		G		■		V				Y
	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

The vertical lines, which may occur due to improper connections between the panel and the PCB, occur with intervals of 50 inches(26mm). If vertical lines occur with intervals of more than 26mms, it indicates a failure of the DDP1011 IC itself. If they occur with intervals of less than 26mm, it means that more than two pins have bad connections.

DA,DB output wave
[Screen:WHITE]

Pin Name	Description	Pin Name	Description
V	Voltage : 3.3V	T	Test Point
V2	VCC2 : 8V	ME	Mirror Bias Extra
DA	A Channel Data Bus [When measured, there should be a waveform]	C	Clock
DB	B Channel Data Bus [When measured, there should be a waveform]	P#	A,B Channel Positive
No.	MBRST# (Mirror Bias Rest) 26V	N#	A,B Channel Negative
G	The part from the present position to the GND (The black part is also a GND.)		

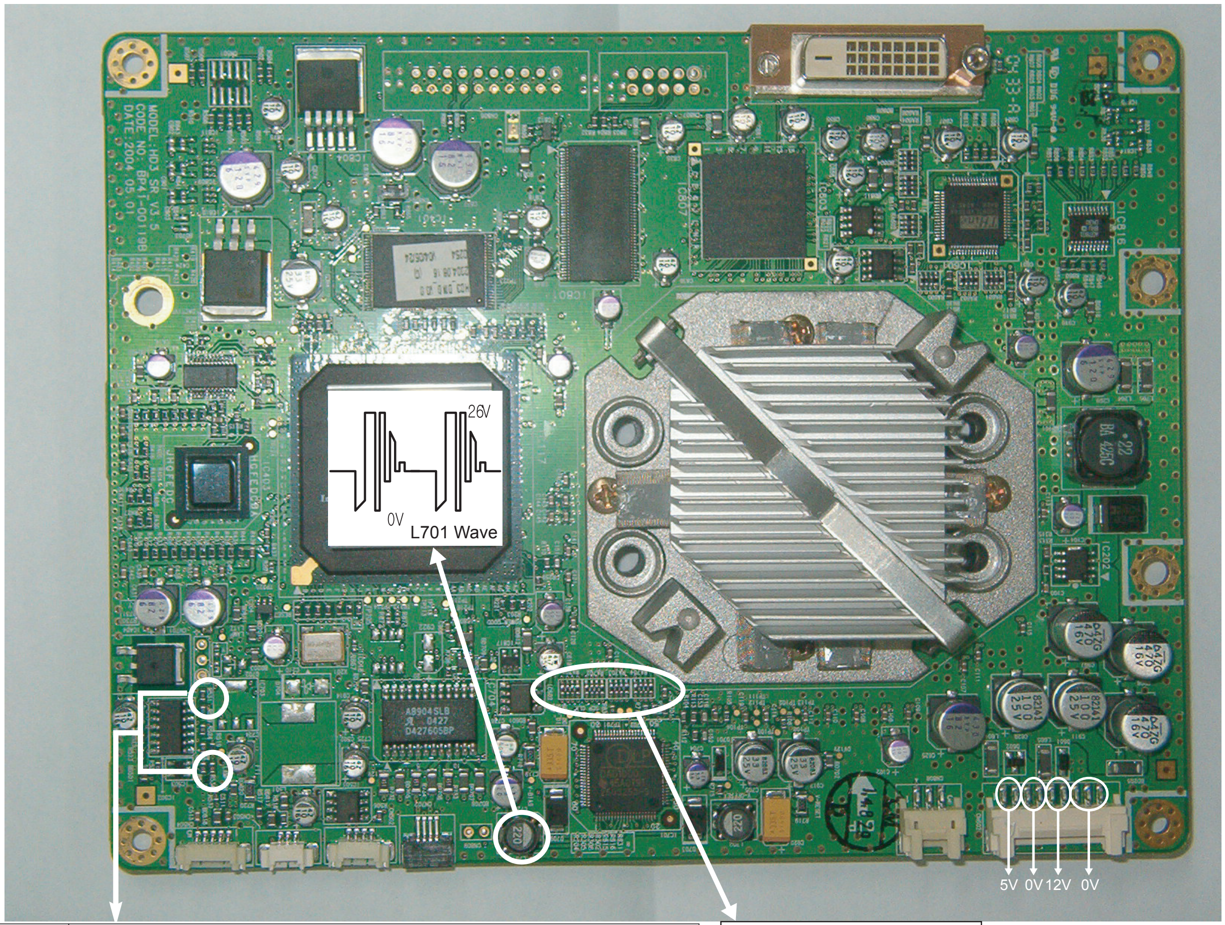
2-10-4 Description of Terminal Characteristics

PIN NAME	DESCRIPTION
SCTRL_BN/P	B channel LVDS serial control
DCLK_BN/P	B channel LVDS CLOCK
SCPDI	SERIAL CONTROL DATA INPUT
SCPDO	SERIAL CONTROL DATA OUTPUT
SCPENB	SERIAL CONTROL ENABLE
SCPCK	SERIAL CONTROL CLOCK
DMD RESETB	DMD LOGIC RESET
MBRST(14:0)	MIRROR BIAS RESET
MBRST_EXTRA	UNUSED MIRROR BIAS RESET
SCR_CLR	TEST CLEAR PINS(NORMAL GND)
READOUTA(1:0)	A-CHANNEL SERIAL DATA OUT DURING SPAM READ TEST OPERATION
READOUTB(1:0)	B-CHANNEL SERIAL DATA OUT DURING SPAM READ TEST OPERATION
TP(2:0)	MANUFACTORING TEST POINT(NO CONNECTED DURING NORMAL CPERATION)
RSV_A(4:0)/RSV_B(4:0)	RESERVED PINS(NORMAL:GND)
EVCC	REFERENCE VOLTAGE DURING SPAM READ TEST OPERATION(NORMAL GND)
VCC2	MIRROR ELECTRODE VOLTAGE(7.3V)
VCC	LOGIC SUPPLY
VSS	LOGIC GROUND

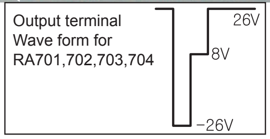
2-10-5 Engine Failure Inspection Flow Chart for the DMD Board

No	Description	Key Point	Remark
1	1) When the power cord is plugged in, 2) DC 380V is automatically supplied to the ballast.	Check whether the DC380V power is supplied to the ballast.	
2	1) When the power key is pressed via the remote control, the micom of the digital board outputs high (5V) PWR signals. 2) The power board operates normally. 5V and 12V are supplied to the DMD CN105 terminal.	Check whether 5V and 12V are supplied to the CN105 terminal.	* 12V must be supplied to operate the motor. (The voltage of the motor driving power is 12V.)
3	1) The MTR Reset signal is supplied to the R161 terminal of the motor IC101 from the micom on the digital board and then the motor starts to drive. 2) If the color wheel rotates for a certain time and then stops, check whether the color wheel sensor is normal. (Check the waveform on the No.2 terminal below CN102.)	After the set is powered on, check whether 5V is detected on pin No.49 of IC101. → After a while, the sound generated by the rotating color wheel is heard.	* If 5V is not detected, the motor will not operate.
4	1) Check whether the signal (SCI: START CONTROL INPUT) that turns on lamp #2 of CN109 on the DMD board is high (5V).	Check whether CN109 #2 signal is 5V.	* When SCI is high (5V), the lamp litz of CN109 is low (0V). * CN109 #2 terminal voltage changes to pulse wave form 14 seconds after (for 50 inch TV) the time that the voltage is 5V. * When about 4 seconds have passed after changing to pulse waveform, the screens are displayed on the set.
5	1) Method for checking whether the DDP1010 IC RESET is normal.	If the voltage between R254 and R255 is 3V, it is normal.	

2-10-6 Output Voltage States of the DMD Board Parts

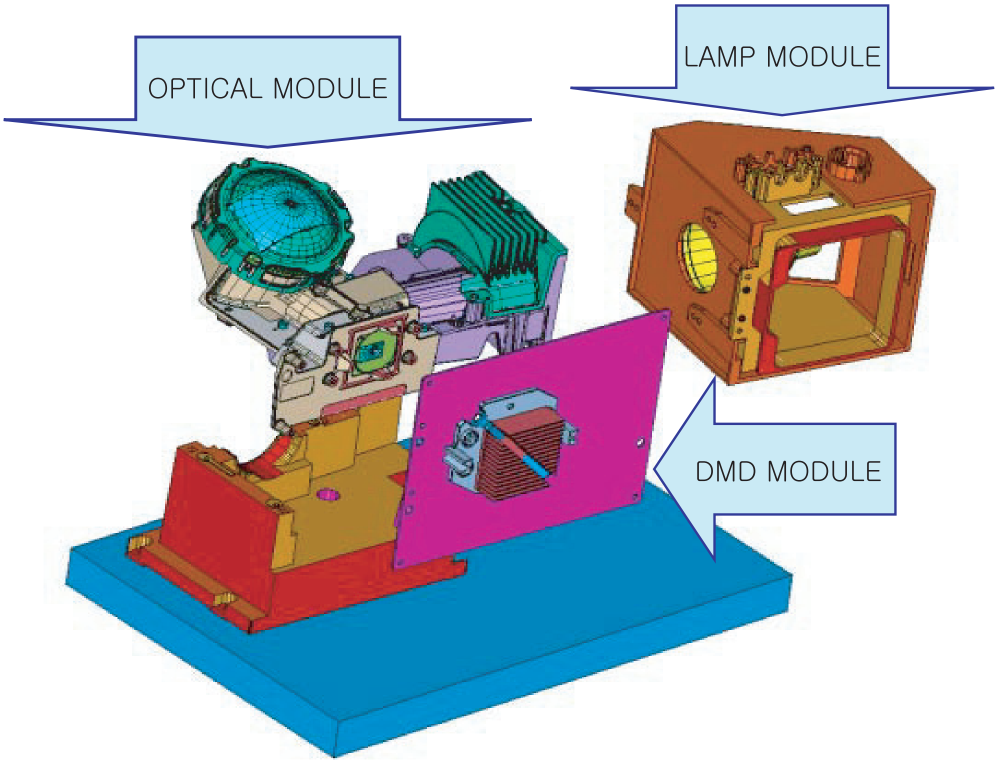


Loc.	Characteristics	
R534	LAMP EN	High from DDP1010
R531	LAMP LITZ	High (5V) before the lamp turns on. Low (0V) when the lamp turns on.

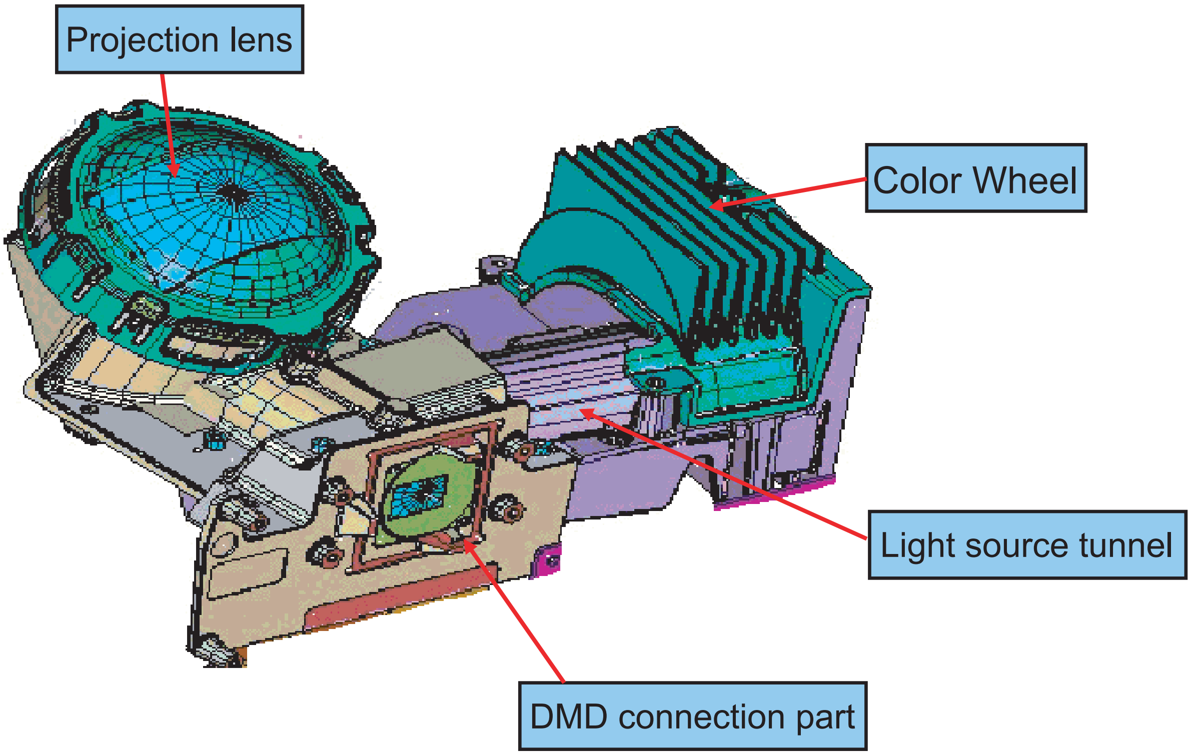


2-11 Optical Science

2-11-1 Engine Failure


OPTICAL MODULE
LAMP MODULE
DMD MODULE

2-11-2 Optical Science Portion

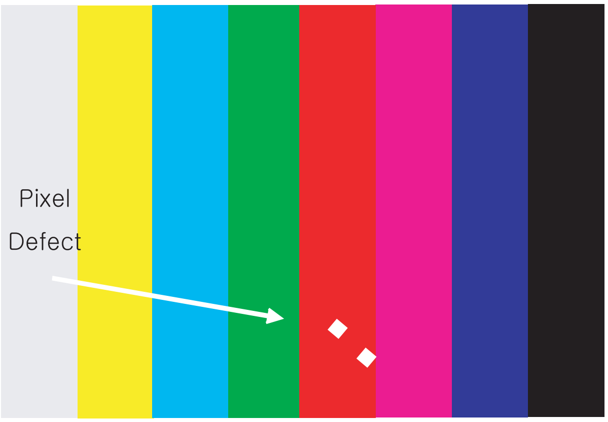

Projection lens
Color Wheel
Light source tunnel
DMD connection part

2-11-3 Optical Specification

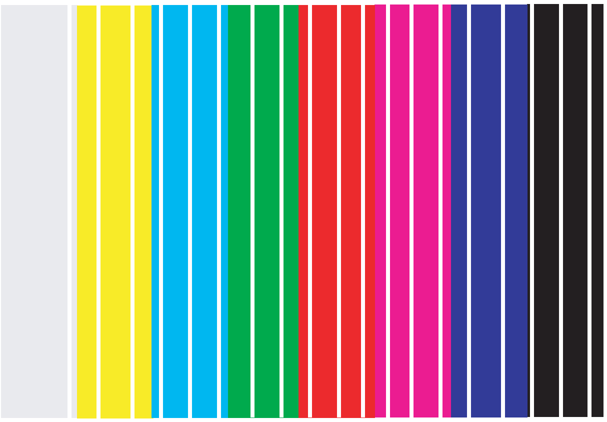
Parameter	Nominal Value	Unit	Connent
Brightness	460	nits	7-segment color wheel, TI development board, no spoke light recapture, reference lamp
Uniformity (ANSI) - Typical - Minimal	+/- 15 +/- 25	% %	+ : brightest of 13 ANSI points/average of 9 points - : darkest of 13 ANSI points/average of 9 points
Contrast full on/off - Typical	1500:1	n.a.	7 segment color wheel, TI development board, no spoke light recapture
Color Temperature	7,500 K (Warm 1)	n.a.	measured in image center
F-number	≥ 2.6	n.a.	design value
Projection distance at 50" screen size	585	mm	projection distance : distance from vertex of front lens to projection screen
Exit pupil position	30.98 mm	mm	design value, distance to vertex of front lens
F.O.V (Field of View)	94	deg.	design value
Panel size	12.451 x 7.008	mm	Diamond Pixel Configuration
Lateral color aberration @ 50" (R-G ; B-G)	≤ 7 ≤ 8.5	㎛ ㎛	Desion value 440/546/640 ㎛
TV distortion - in horizontal direction - in vertical direction	≤ | 0.3 | ≤ | 0.3 |	% %	Pin Cushion or Barrel condition
folding angle	66	deg.	mechanical design value

2-12 Service

2-12-1 Service Hint #1 - DMD Board Assy

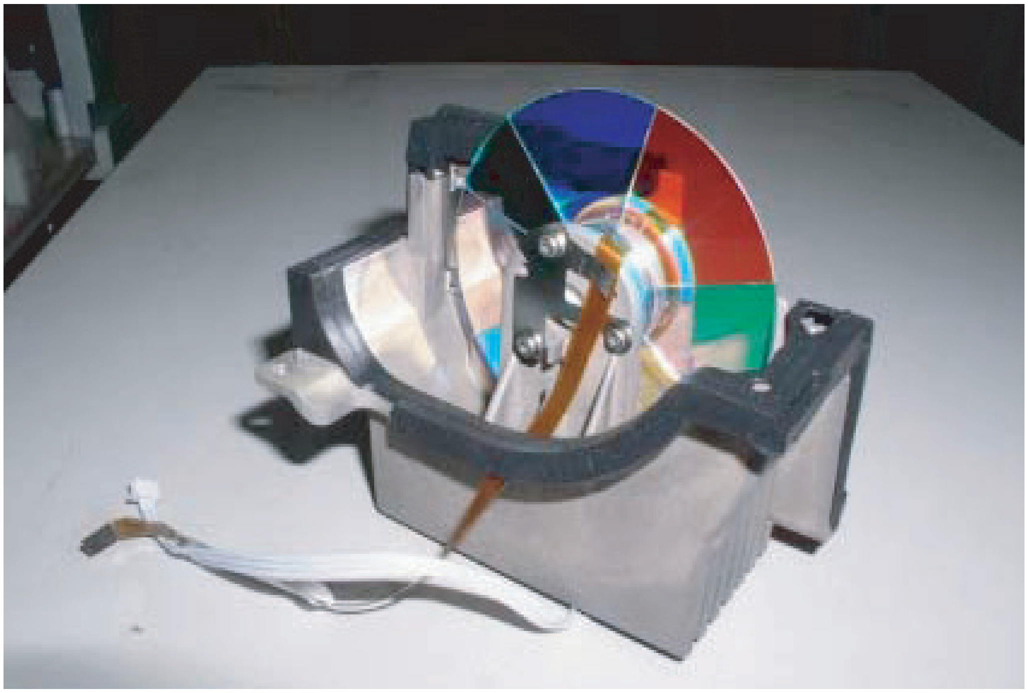


Vertical Line Problem (Jail Bar effect)



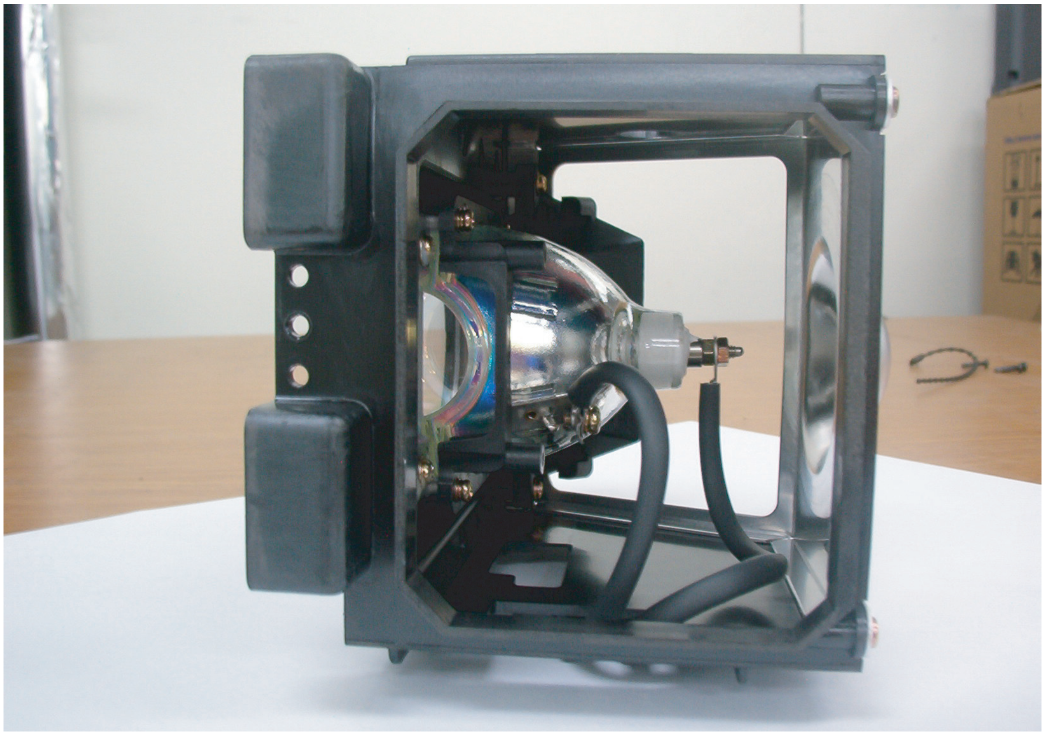
Problem : PIXEL DEFECT, VERTICAL LINE
Solution : Change the DMD Board assembly

2-12-2 Service Hint #2 - ColorWheel Assy



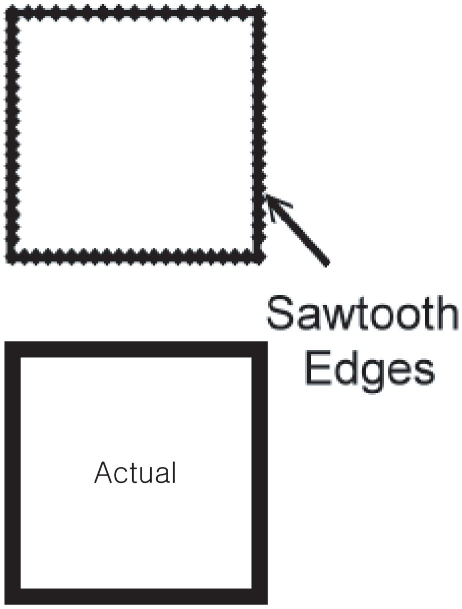
Problem : INCREASED NOISE
Solution : Change the Color wheel module

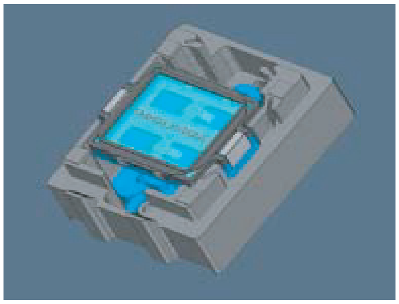
2-12-3 Service Hint #3 - LAMP Assy



Problem : LOW BRIGHTNESS or No Power
Solution : Change the Lamp module

2-12-4 Service Hint #4 - Actuator

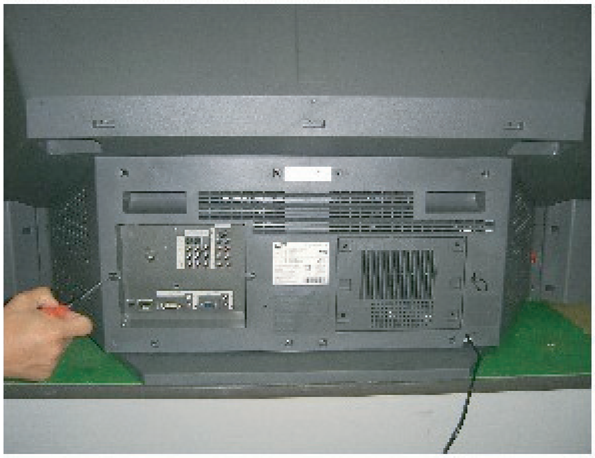




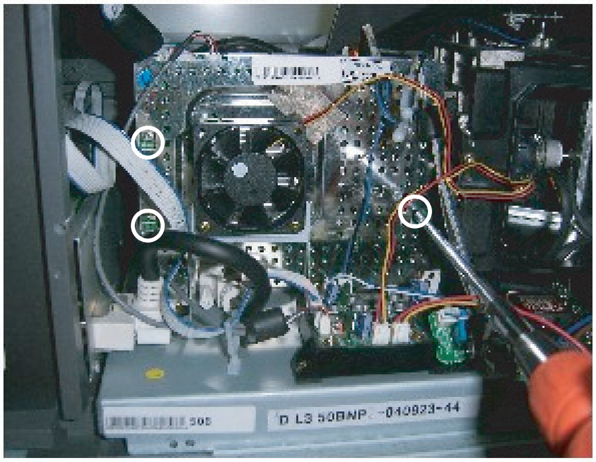
Problem : Noise in high frequency band(1200Hz), discordance on the border area
Solution : Change the Actuator

2-13 Tilt the Screen

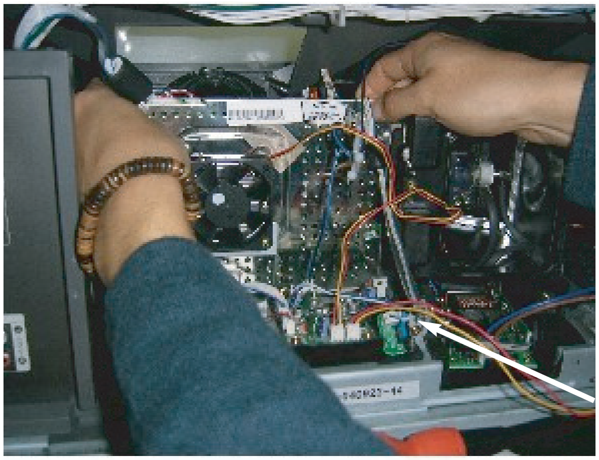
① Remove the Bottom cover.



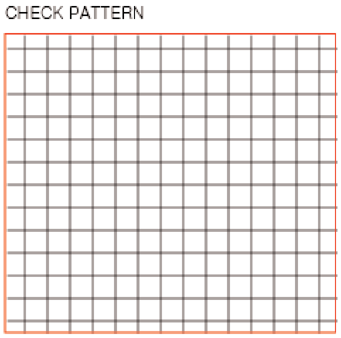
② Loosen the 3 points screws.



③ Turn off the power to make the SET STAND-BY mode.
In order to enter the Service Mode, Press "Mute" → "1" → "8" → "2" → "POWER" button on the Remote Control. Select "DDP1011(L3)" on the first display of the Service Mode menu. Press the ▲▼ (Up or Down) button to move to TEST PATTERN, then press ENTER to select. Press the ▶ (Right) button until you see CHECK PATTERN. Then, adjust the screen position, by holding both of the upper corners of the DMD board.



Fix the safety switch on the right with tape so that the set can be turned on after removing the bottom cover.



※ Even when those screws are removed, the board does not separate it can be moved within the adjustable range because there is a spring screw at the center that holds it.

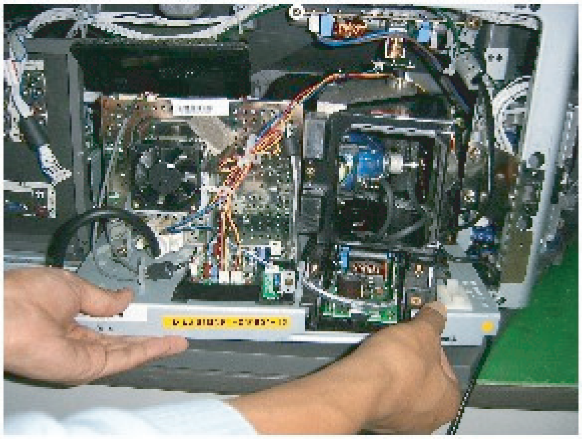
※ When adjusting the screen, it is better for two people to work together.
One person should direct the picture position while the other person looks at the screen.

※ The movement direction of the board and the picture are opposite.
- When the board is lifted upward, the screen descends down.
- When it is tilted to the left, the screen tilts to the right.

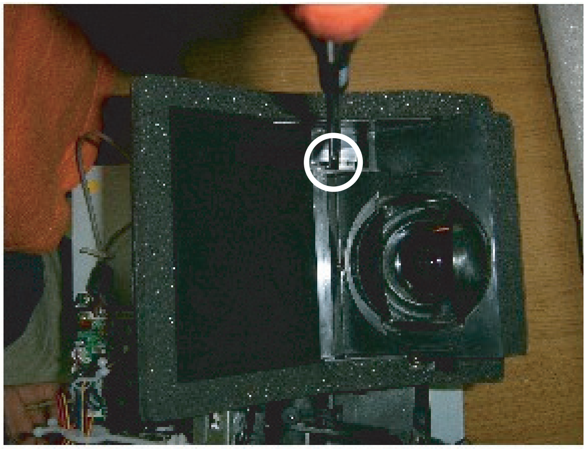
※ When the picture adjustment is completed:
First, tighten the two screws on the left of the DMD board and then slowly tighten the one screw on the bottom right.
Be careful not to touch the board while tightening the screws.
(When using an electric-powered screwdriver, be careful that the torque is not too high.)

2-14 Align the Focus

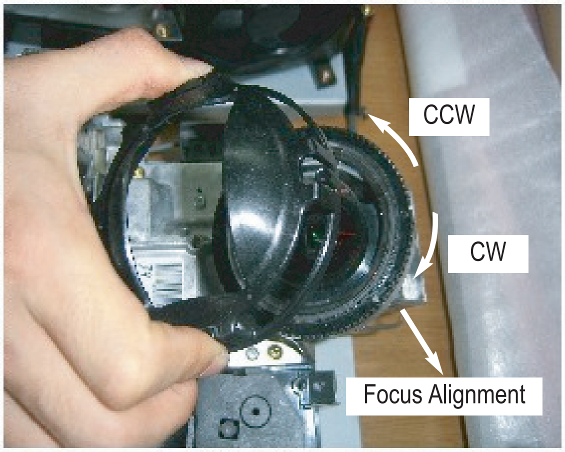
① Pull out the Engine ass'y.



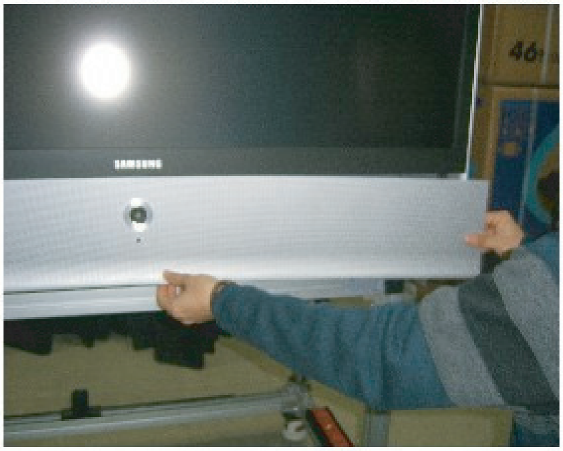
② Remove the Cover lens.



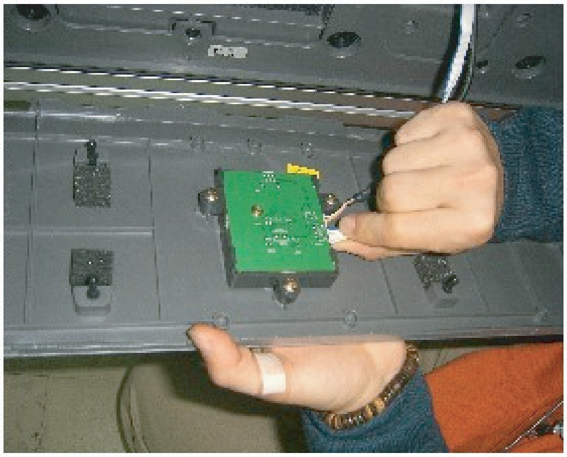
③ Remove the lens holder.


CCW
CW
Focus Alignment

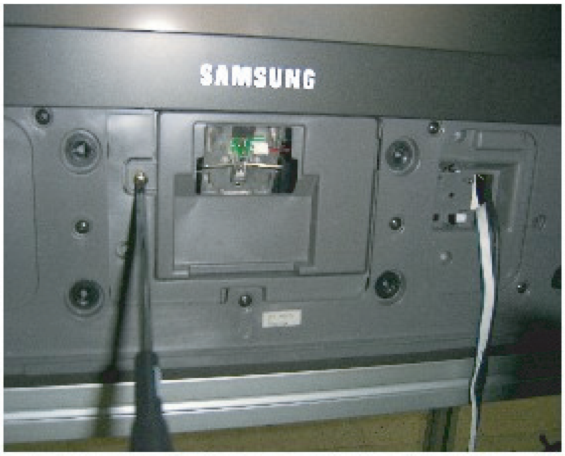
④ Remove the Front mask.



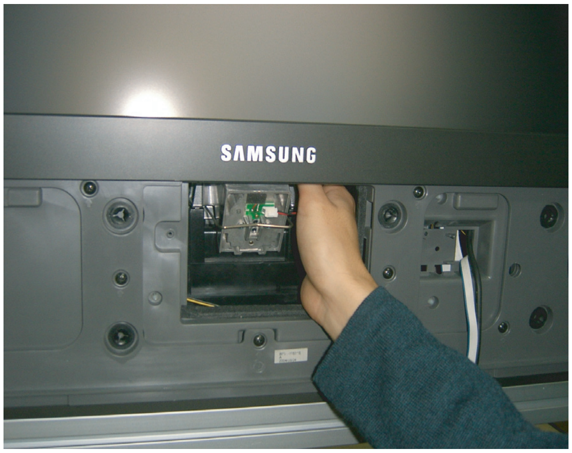
⑤ Remove the cable.



⑥ Remove the door.



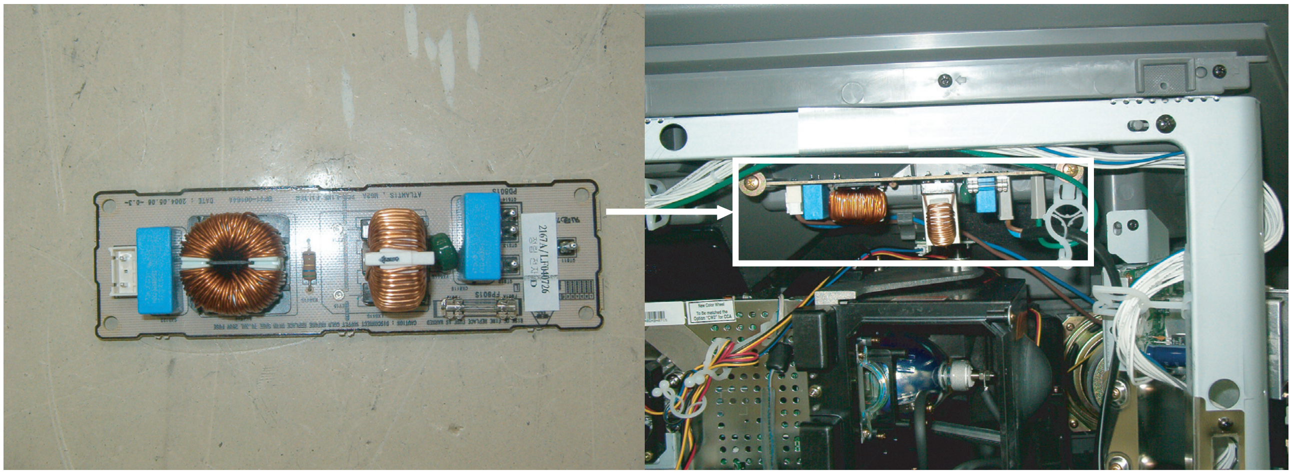
⑦ Align focus and then reassemble.



- * Input the Cross hatch pattern or lion head pattern
- * Move the focus alignment dial of Projection lens to the clockwise or counter clockwise until the picture is clear displayed.

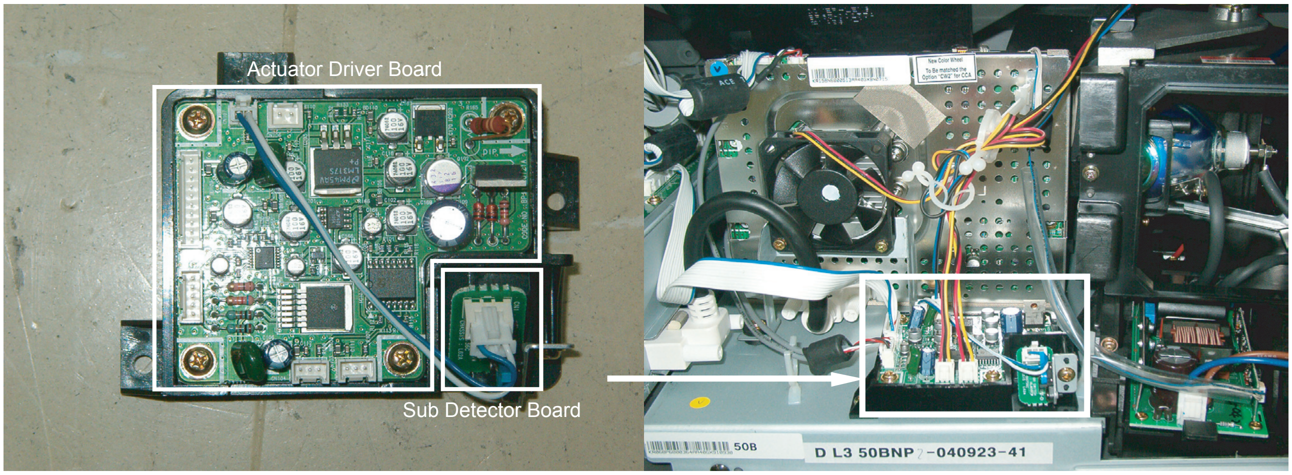
2-15 Line Filter

2-15-1 Assy Line Filter Board



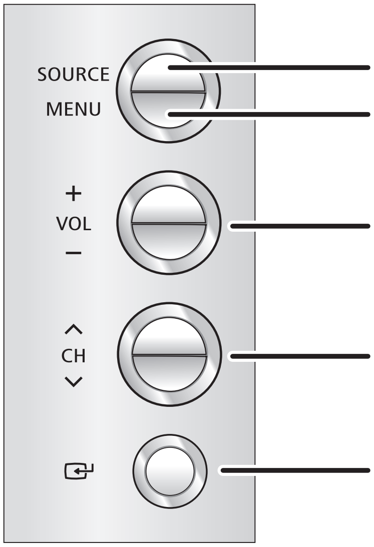
2-16 Actuator Driver & Sub Dector Board

2-16-1 Assy Actuator Driver & Sub Dector Board


Actuator Driver Board
Sub Detector Board

2-17 Right Side Buttons

The buttons on the right side panel control your TV's basic features, including the on-screen menu system. To use the more advanced features, you must use the remote control.



Press to switch between viewing TV programs and signals from connected components.

Press to see the on-screen menu.

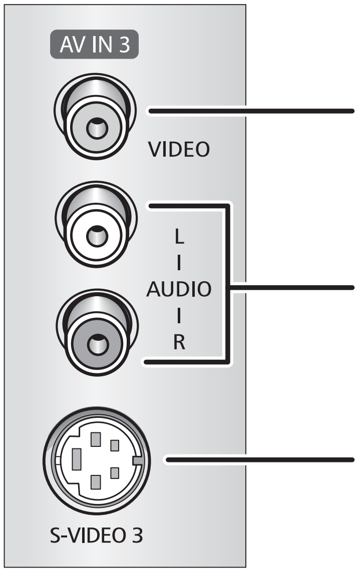
Press to lower or raise the volume and to select items when using the on-screen menu.

Press to change channels and move between items on the on-screen menu.

Press to activate (or change) a particular item.

2-18 Side Panel Jacks

Use the rear of right side panel jacks to connect a component that is used only occasionally (a camcorder or video game, for example).



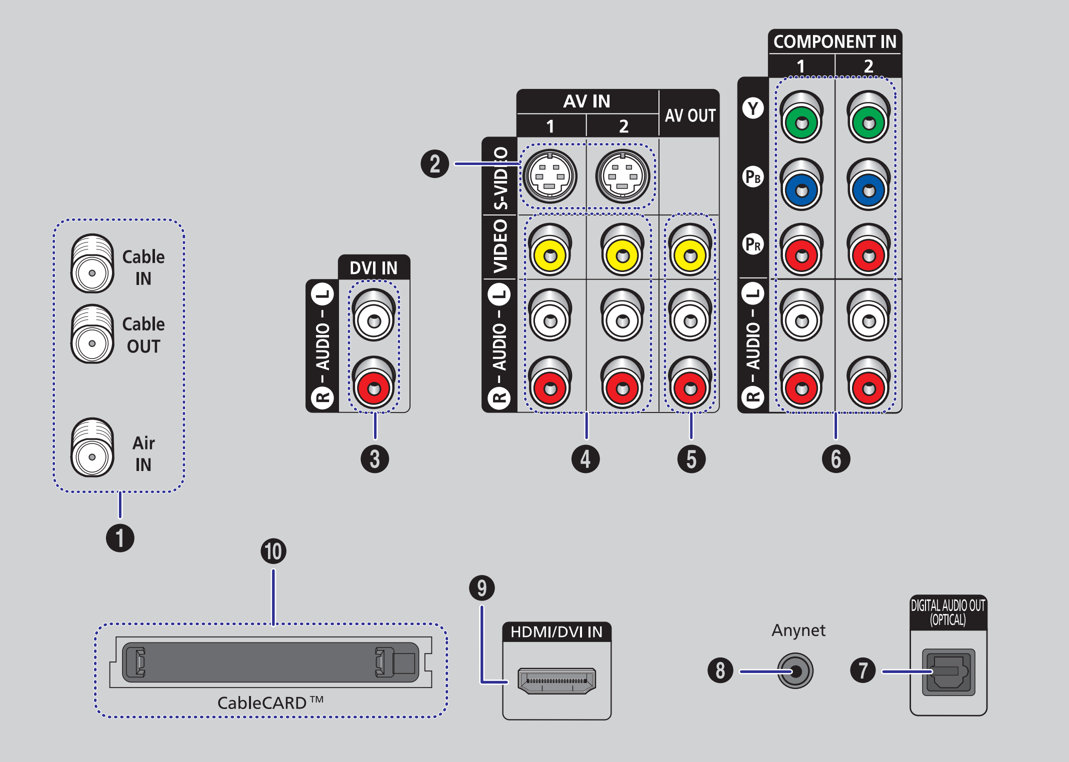
Connect the video signal from a camcorder or video game.

Connect the audio signal from a camcorder or video game.

Connect an S-video signal from a camcorder or video game.
(S-Video 3 jack and Audio L/R input 3 are used together.)

2-19 Rear Panel Jacks

Use the rear panel jacks to connect components such as a VCR. You can connect different components such as VCRs, Set-Top Box and a DVD player etc., because there are two sets of video input jacks and two sets of component video input jacks on the rear panel of your TV. For more information, please see "Connections".



① ANTENNA terminals

Two independent cables or antennas can be connected to these terminals. Use "Cable IN" and "Air IN" terminals to receive a signal from VHF/UHF antennas or your cable system. Use the "Cable OUT" terminal to send the signal being received by the "Cable IN" terminal out to another component (such as a Cable Set-Top Box). The PIP channel can be received only when a signal source is connected to "Cable IN".

② S-VIDEO INPUT jacks

Connects an S-Video signal from an S-VHS VCR or DVD player.

③ DVI (Digital Video Interface) AUDIO INPUT jacks

Connect to the digital audio output jacks of a device with DVI output.

④ VIDEO/AUDIO INPUT jacks

Connect video/audio signals from external sources, such as VCR or DVD players.

⑤ VIDEO/AUDIO OUTPUT jacks

Sends a video signal from the TV to an external source, such as a VCR.

Note: It is available only in RF, Video and S-Video modes.

⑥ Component1, 2 jacks (Y, PB, PR, L, R)

Use these jacks to connect the component video/audio signals from a DVD player or a set top box.

⑦ DIGITAL AUDIO OUT(OPTICAL) jack

Connect to a Digital Audio Component.

⑧ Anynet

Please refer to the Anynet Owner's Instruction.

This jack is for repair and software upgrades.

⑨ HDMI (High Definition Multimedia Interface)/ DVI INPUT jack

Connect to the HDMI jack of a device with HDMI output.

Connect to the digital video output jack for device with DVI output.

⑩ CableCARD™

Insert the CableCARD into the slot.

2-20 Remote Control

You can use the remote control up to about 23 feet from the TV. When using the remote control, always point it directly at the TV. You can also use your remote control to operate your VCR, Cable box, DVD player or Samsung Set-Top Box.

1. POWER
   Turns the TV on and off.

2. P.MODE
   Adjust the TV picture by selecting one of the preset factory settings (or select your personal, customized picture settings.)

3. ANTENNA
   Press to select "AIR" or "CABLE".

4. CHANNEL NUMBER
   Press to directly tune to a particular channel.

5. -
   Press to select additional channels (digital and analog) being broadcast by the same station. For example, to select channel "54-3", press "54", then press "-" and "3".

6. VOL+, VOL-
   Press to increase or decrease the volume.

7. MUTE
   Press to mute the TV sound.

8. ANYNET
   Runs the Anynet view functions and sets up Anynet devices.

9. MENU
   Displays the main on-screen menu.

10. CH.LIST
   Displays the channel list.

11. FAV.CH (Favorite Channel)
   Press to switch between your favorite channels.

12. MODE
   Selects a target device to be controlled by the Samsung remote control (i.e., TV, STB, VCR, CABLE, or DVD).

13. PRE-CH
   Tunes to the previous channel.

14. SOURCE
   Press to display all of the available video sources (i.e., TV, Set-Top box, VCR, DVD, DTV).

15. CH
   Press to change channels.
   Moves from one set of screen information to the next in TV Guide menu.

16. INFO
   Press to display information on the TV screen.

17. EXIT
   Press to exit the menu.

18. ▲ , ▼, ◀, ▶, ENTER
   Press to select highlight up, down, left, or right. While using the on-screen menus, press the ENTER to activate (or change) a particular item.

19. MTS(Multichannel Television Stereo)
   Press to choose Stereo, Mono or SAP (Secondary Audio Program).

20. PIP(Picture In Picture)
   Displays the available channels in sequence.
   (These buttons change channels in the PIP window only.)

21. STILL
   Press to pause the current screen.

22. ASPECT
   Press to change the screen size.

23. SRS
   Activates TruSurround.

24. DNIe
   (Digital Natural Image engine)
   Activates DNIe.

25. SET
   Used during set up of this remote control, so that it will work compatibly with other devices.
   (Set-Top box, VCR, Cable box, DVD, etc.)

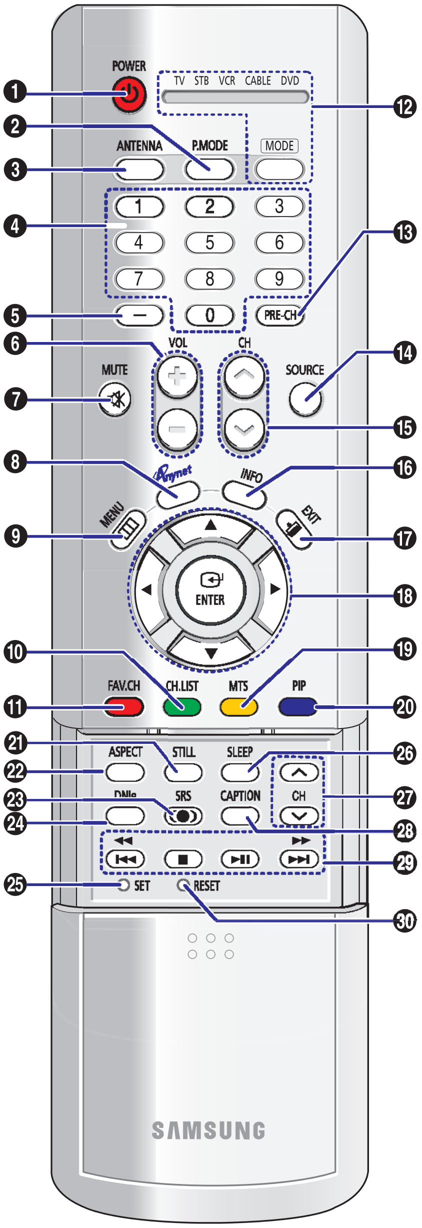
26. SLEEP
   Press to select a preset time interval for automatic shutoff.

27. PIP Controls
   CH ∧ / ∨; Press to displays the available channels in sequence. (These buttons change channels in the PIP window only.)

28. CAPTION
   Controls the caption decoder.

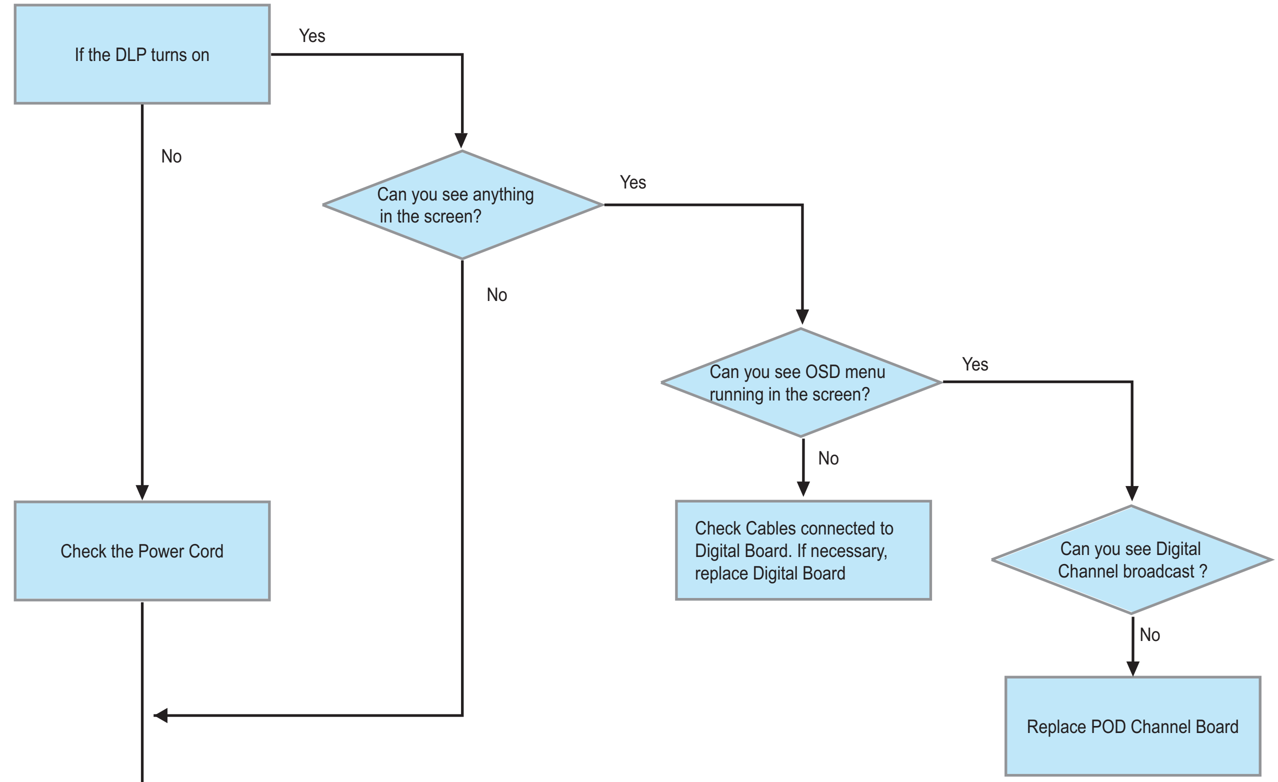
29. VCR/DVD Controls
   Controls VCR or DVD functions: Rewind, Stop, Play/Pause, Fast Forward.

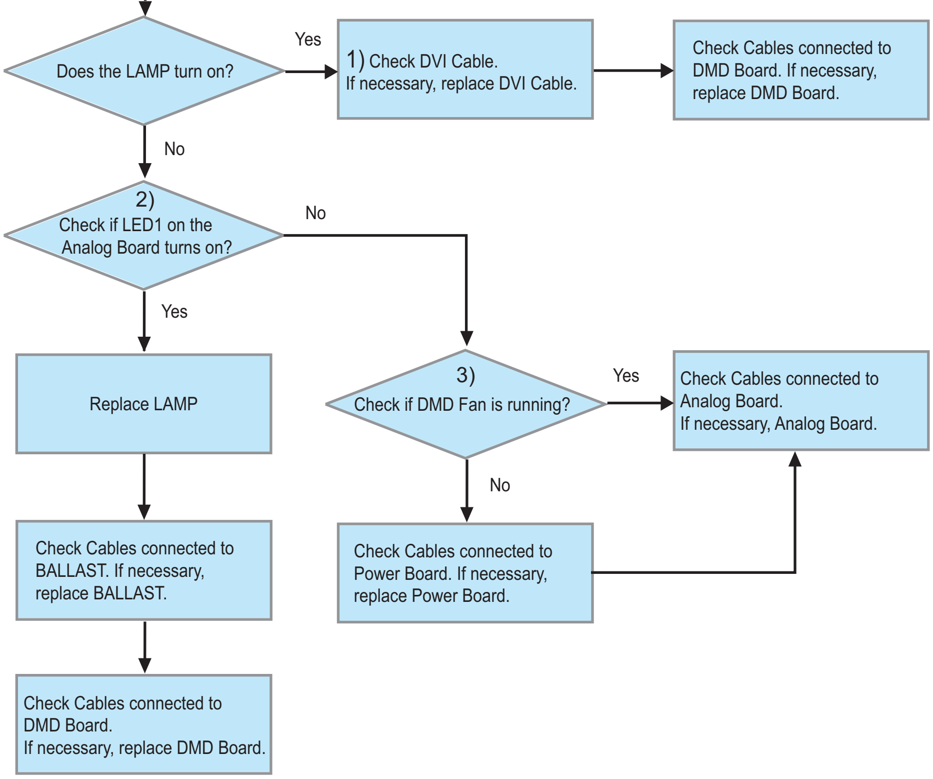
27. RESET
   If your remote control is not functioning properly, take out the batteries and press the reset button for about 2~3 secons. Re-insert the batteries and try using the remote control again.



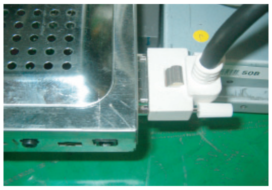
3. Troubleshooting

3-1 Flow Chart for Malfunction

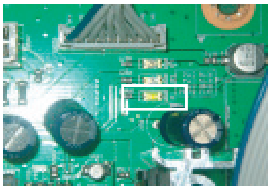

If the DLP turns on
Yes
No
Can you see anything in the screen?
Yes
No
Can you see OSD menu running in the screen?
Yes
No
Check the Power Cord
Check Cables connected to Digital Board. If necessary, replace Digital Board
Can you see Digital Channel broadcast ?
No
Replace POD Channel Board


Does the LAMP turn on?
Yes
1) Check DVI Cable.
If necessary, replace DVI Cable.
Check Cables connected to DMD Board. If necessary, replace DMD Board.
No
2)
Check if LED1 on the Analog Board turns on?
No
Yes
Replace LAMP
3)
Check if DMD Fan is running?
Yes
Check Cables connected to Analog Board.
If necessary, Analog Board.
No
Check Cables connected to BALLAST. If necessary, replace BALLAST.
Check Cables connected to Power Board. If necessary, replace Power Board.
Check Cables connected to DMD Board.
If necessary, replace DMD Board.

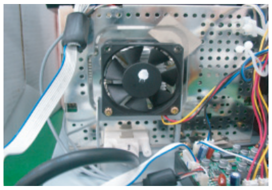
1) DVI Cable



2) LED1

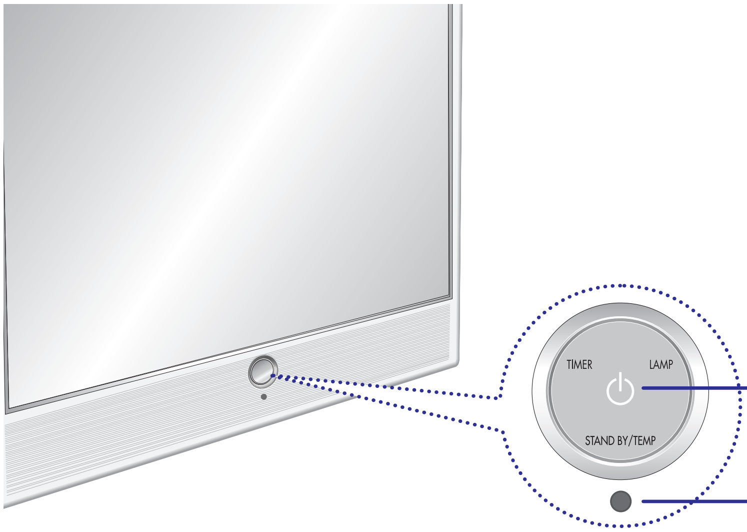


3) DMD Fan



3-2 Status Table for LED

The three lights on the front panel indicate the status of your TV.



POWER
Press to turn the TV on and off.

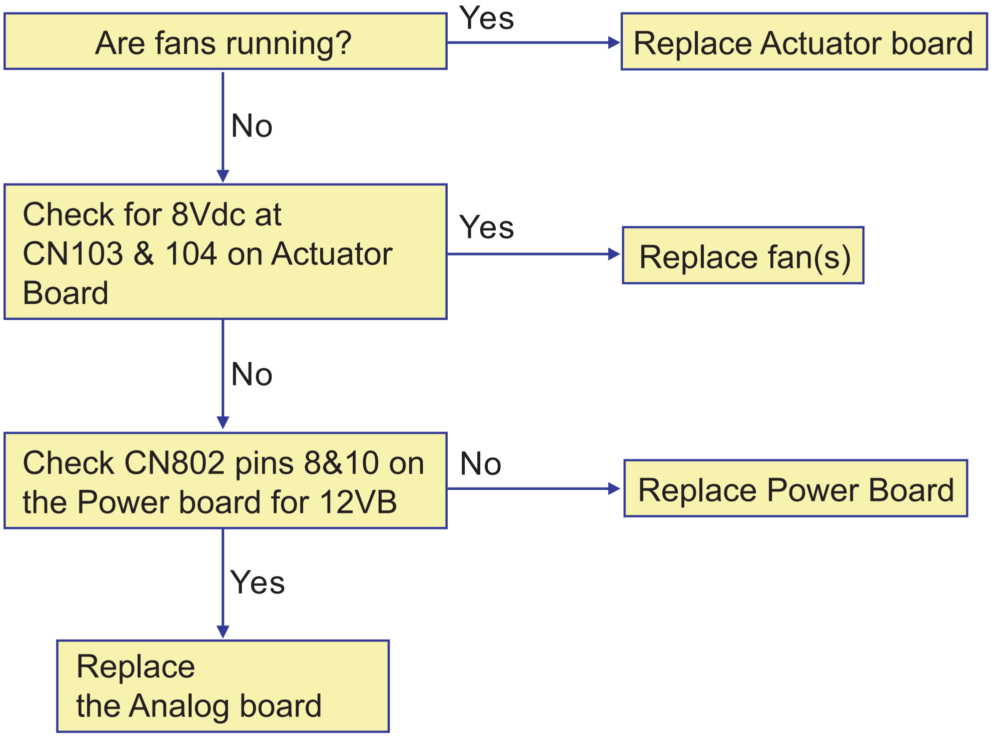
Remote control Sensor
Aim the remote control towards this spot on the TV.

● : Light is On
◑ : Light is Blinking
○ : Light is Off

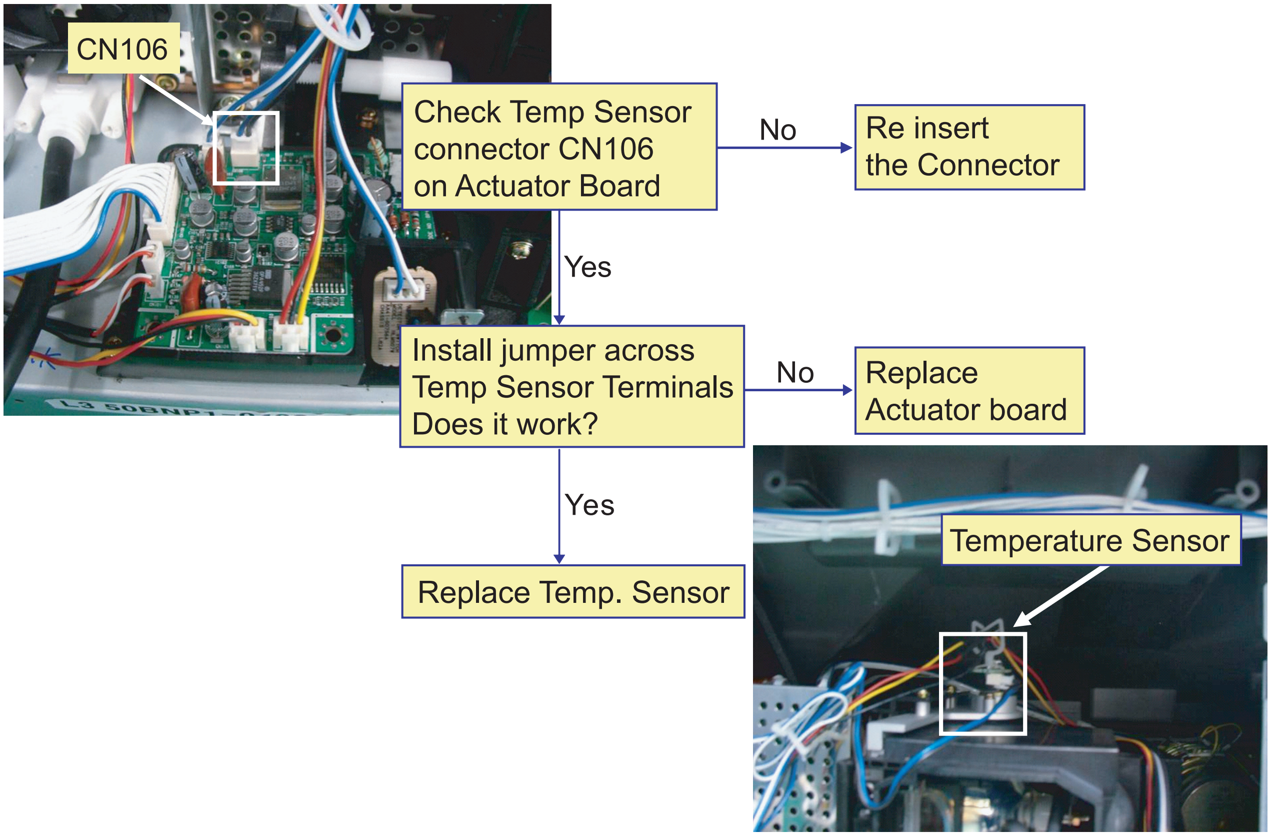
TIMER	LAMP	STAND BY/TEMP	Indication
○	○	●	Standby state.
○	◑	○	The picture will automatically appear in about 15 seconds.
●	◑	○	Auto Timer ON/OFF has been set and the set will automatically be turned on in about 25 seconds.
◑	○	◑	A cooling fan inside the set is not operating normally.
○	◑	◑	Lamp cover on rear of the set is not properly shut.
○	○	◑	Check if the ventilation hole on the rear of the unit is blocked, because if the inner temperature is too high, the power will shut off.
◑	◑	◑	Lamp may be defective. Please contact a certified technician.

⁎ It takes about 30 seconds for the TV to warm up, so normal brightness may not appear immediately.
⁎ The TV has a fan to keep the inside lamp from overheating. You'll occasionally hear it working.

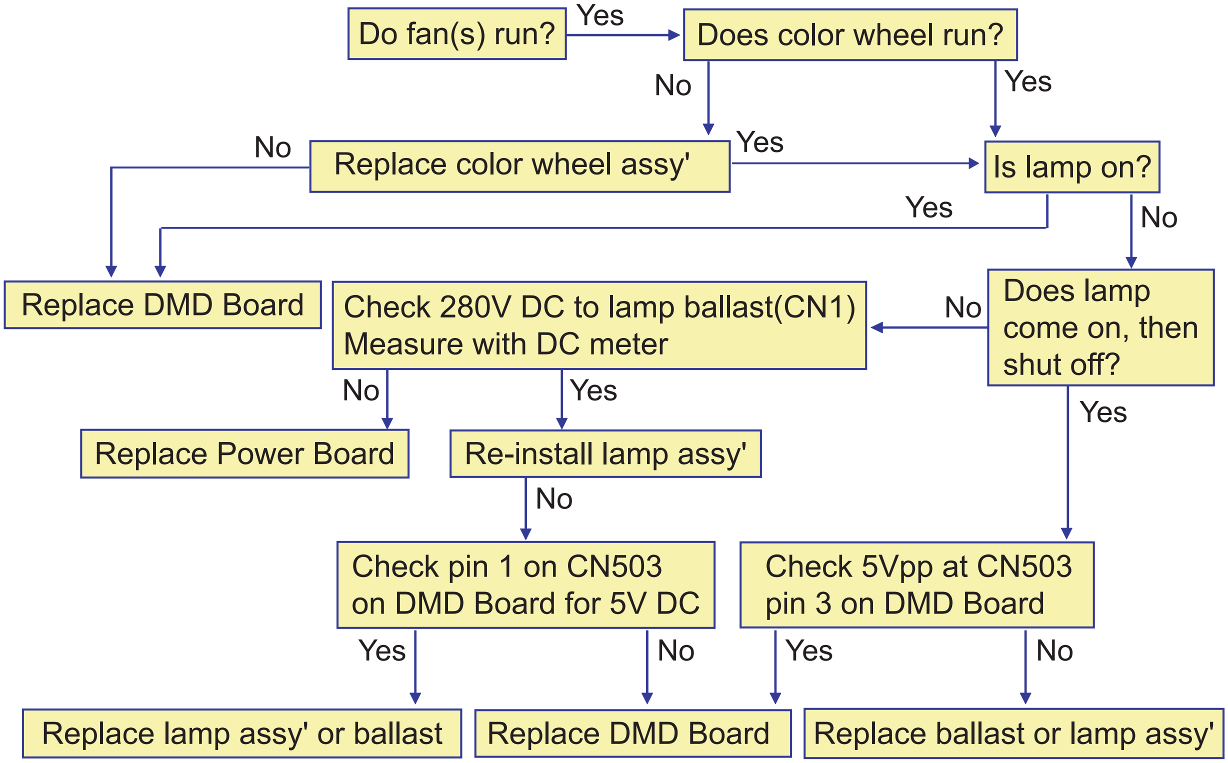
3-3 Blinking Temp & Timer LED


Are fans running?
Yes
Replace Actuator board
No
Check for 8Vdc at CN103 & 104 on Actuator Board
Yes
Replace fan(s)
No
Check CN802 pins 8&10 on the Power board for 12VB
No
Replace Power Board
Yes
Replace the Analog board

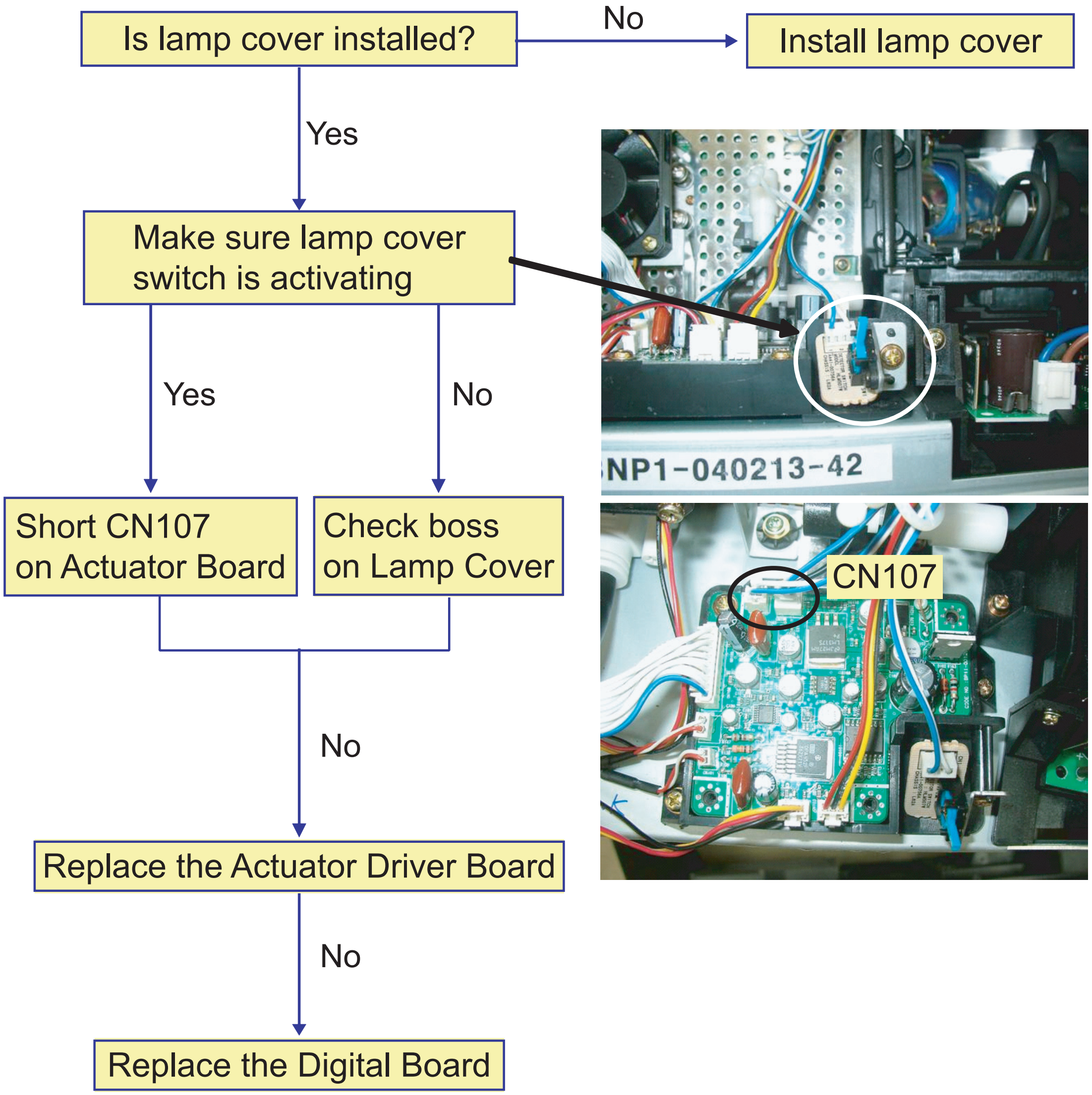
3-4 Blinking Temp LED


CN106
Check Temp Sensor connector CN106 on Actuator Board
No
Re insert the Connector
Yes
Install jumper across Temp Sensor Terminals Does it work?
No
Replace Actuator board
Yes
Replace Temp. Sensor
Temperature Sensor

A blinking lamp LED is the most common failure indication. It can be caused by no lamp, no color wheel, no fan(s), or other defective components.


Do fan(s) run?
Yes
Does color wheel run?
No
Yes
No
Replace color wheel assy'
Yes
Is lamp on?
Yes
No
Replace DMD Board
Check 280V DC to lamp ballast(CN1) Measure with DC meter
No
Does lamp come on, then shut off?
No
Yes
Yes
Replace Power Board
Re-install lamp assy'
No
Check pin 1 on CN503 on DMD Board for 5V DC
Check 5Vpp at CN503 pin 3 on DMD Board
Yes
No
Yes
No
Replace lamp assy' or ballast
Replace DMD Board
Replace ballast or lamp assy'

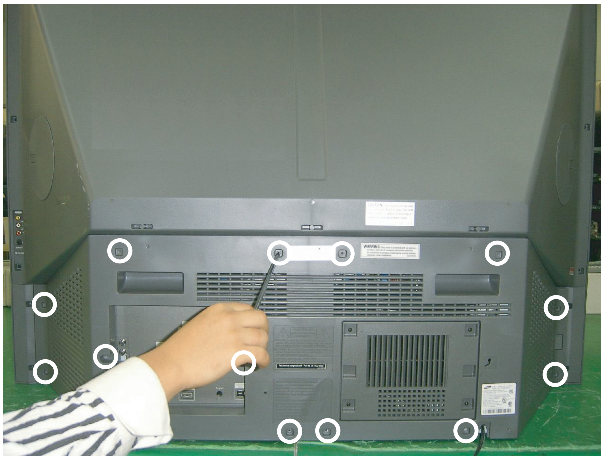
3-5 Blinking Lamp and Temp LEDs


Is lamp cover installed?
No
Install lamp cover
Yes
Make sure lamp cover switch is activating
Yes
No
Short CN107 on Actuator Board
Check boss on Lamp Cover
No
Replace the Actuator Driver Board
No
Replace the Digital Board
NP1-040213-42
CN107

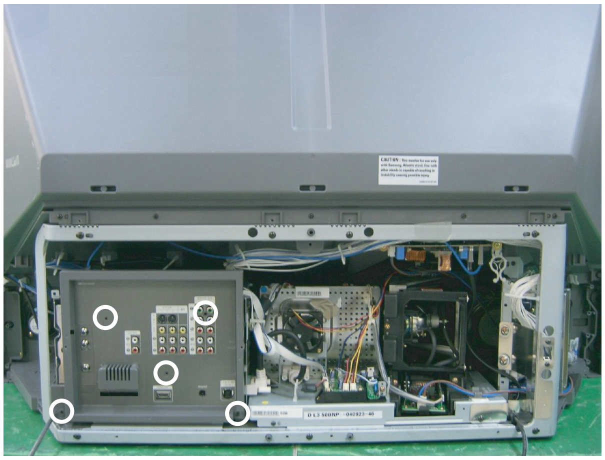
3-6 Disassemble and Reassemble

3-6-1 Separation of the back cover and the chassis

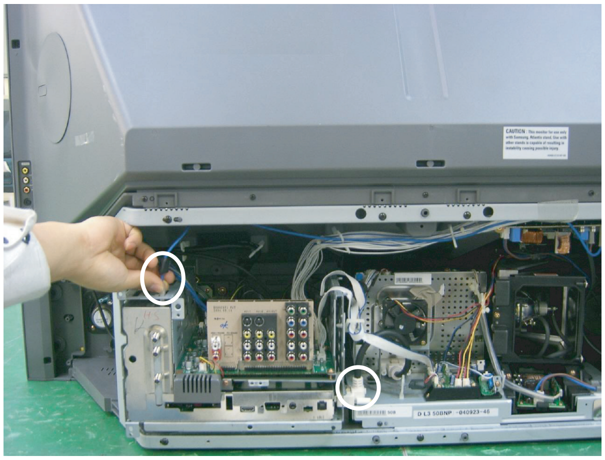
① Remove screws and back cover.



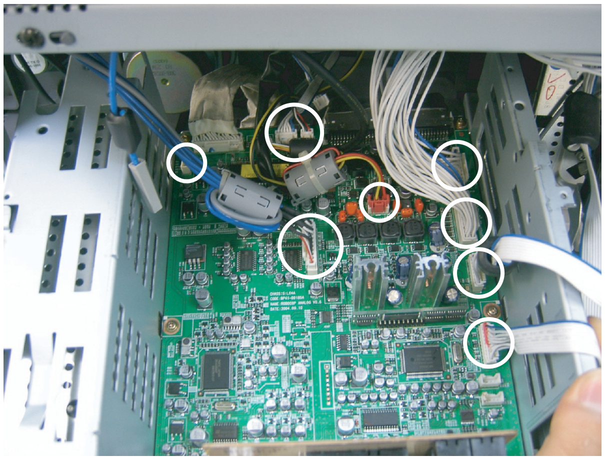
② Remove the screws and the terminal.



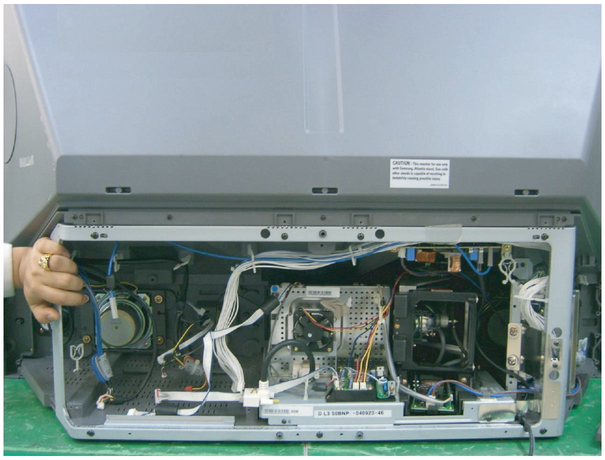
③ Separate a GT-Wire and DVI cable.



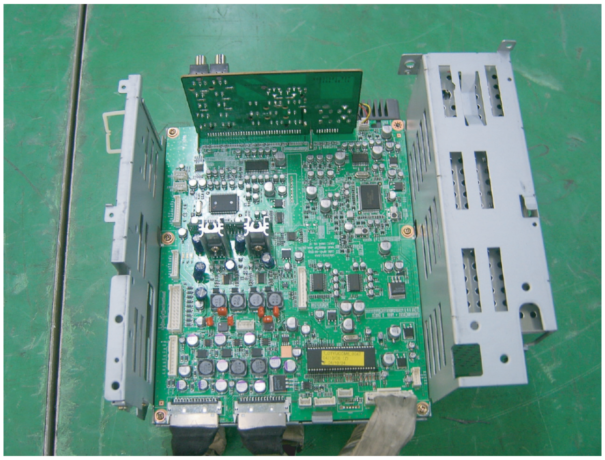
④ Separate the cables.



⑤ After separating the chassis.

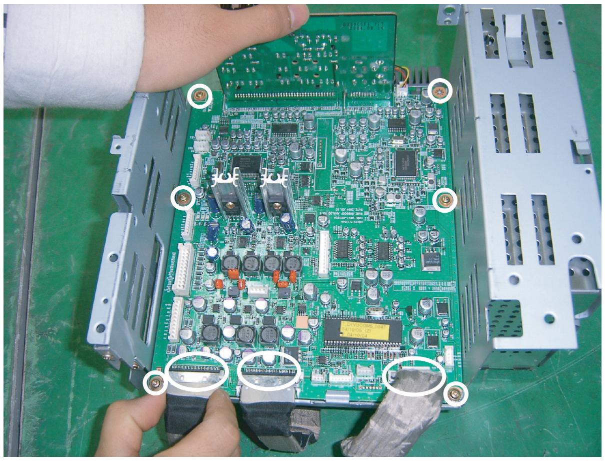


⑥ Chassis.

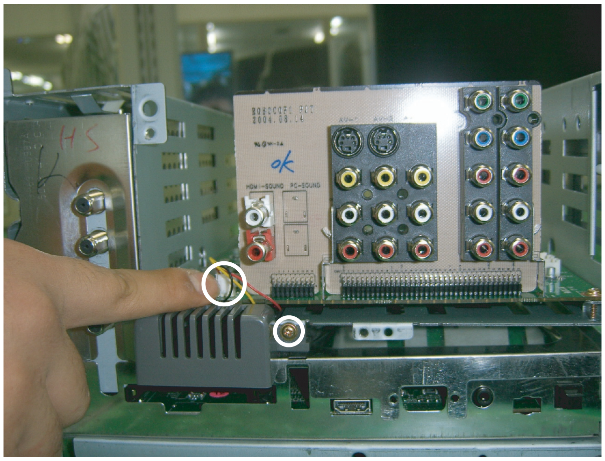


3-6-2 Separation of the Analog and Digital Board

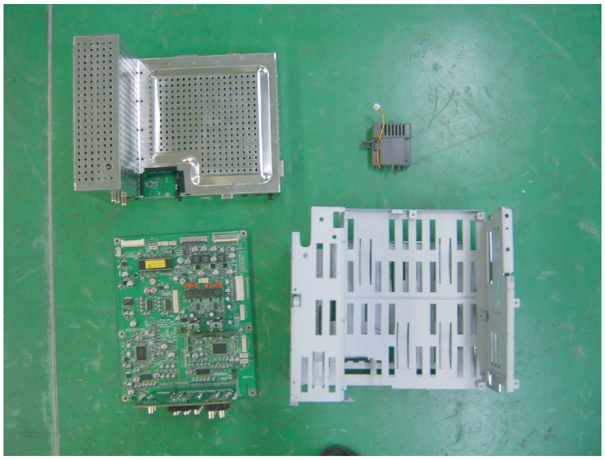
① Remove the screws and cables.



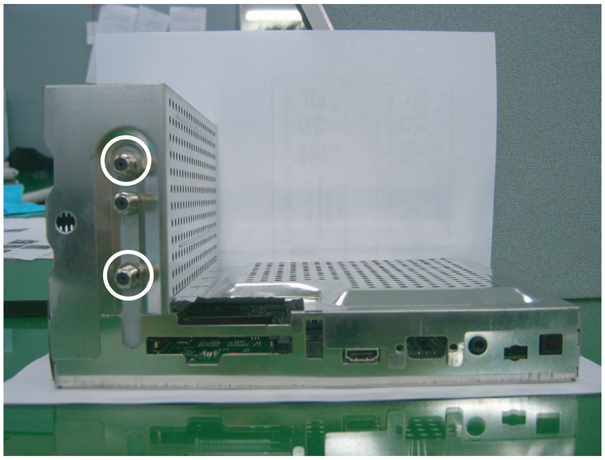
② Remove the screws and cables.



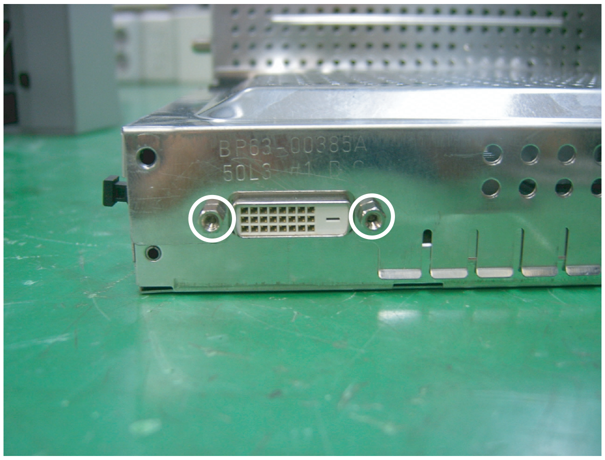
③ Analog, Digital Board and Fan.



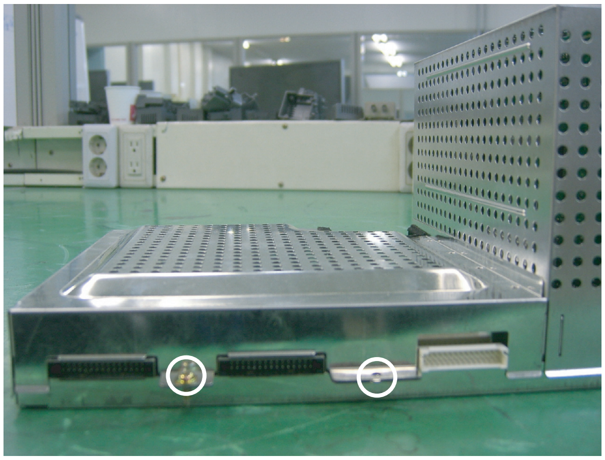
④ Remove the nuts.



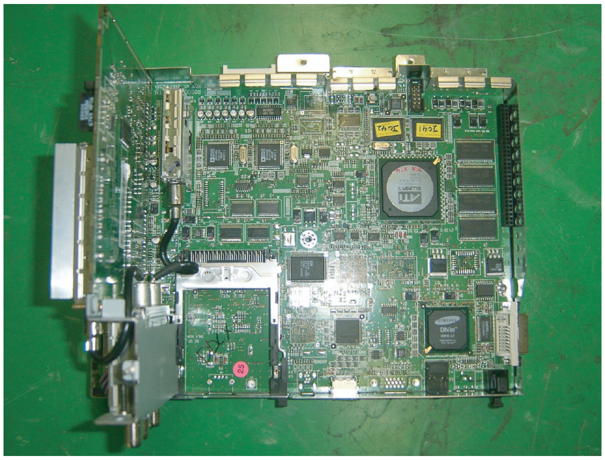
⑤ Remove the nuts.



⑥ Remove the screws.

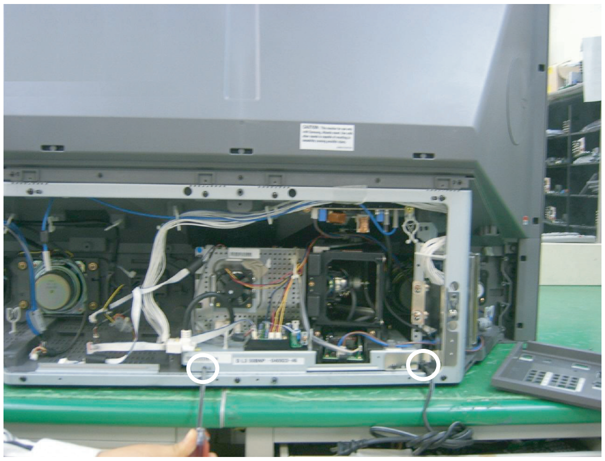


⑦ After removing a Top Shield case.

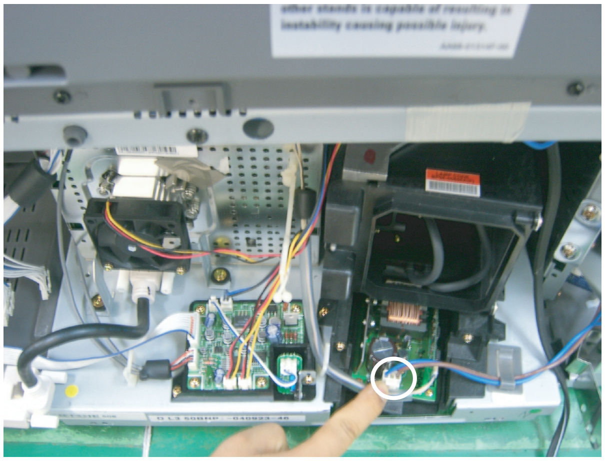


3-6-3 Separation of the optical engine.

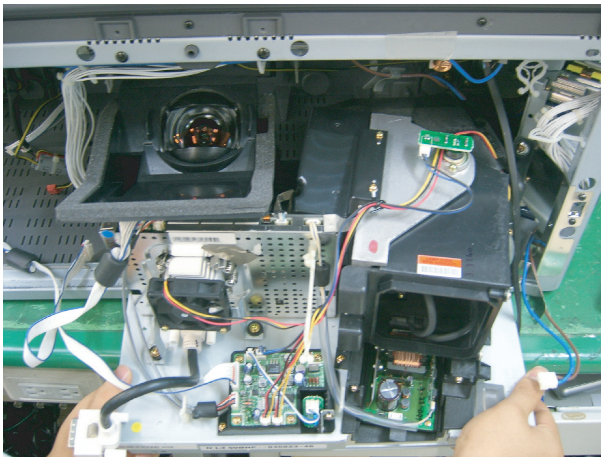
① Remove the screws.



② Separate the cables.

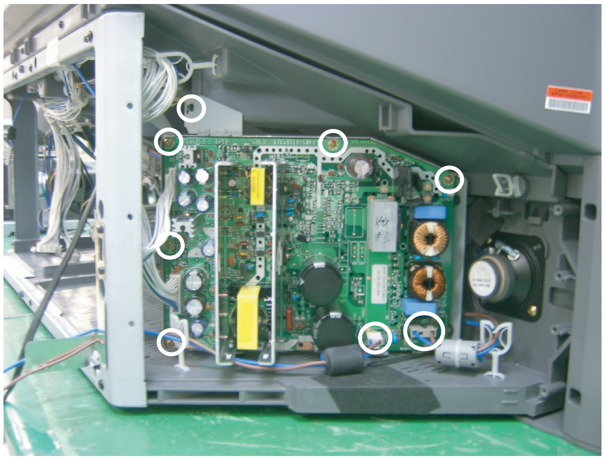


③ Separate the optical engine.

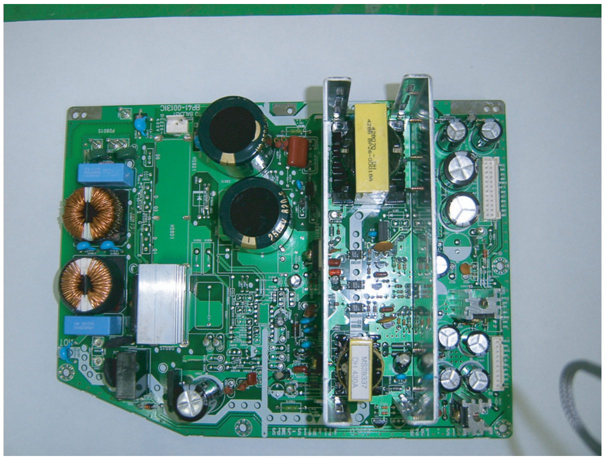


3-6-4 Separation of the Power Board

① Remove the screws and cables.

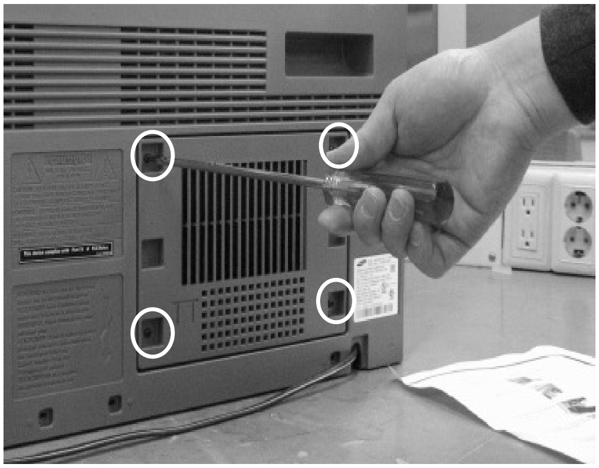


② Power Board.

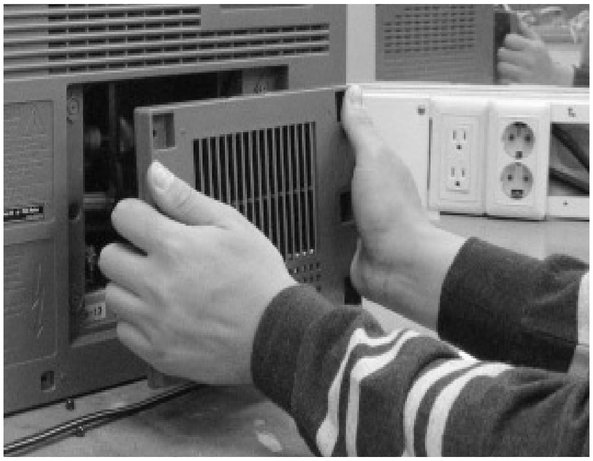


3-6-5 Lamp Replacement

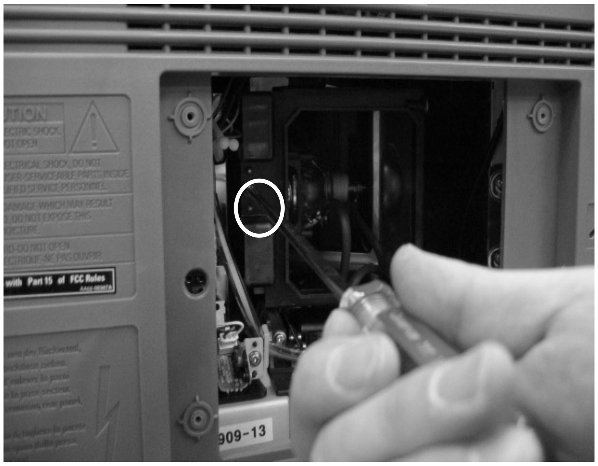
① Unplug TV, then use a screwdriver to remove the screw.



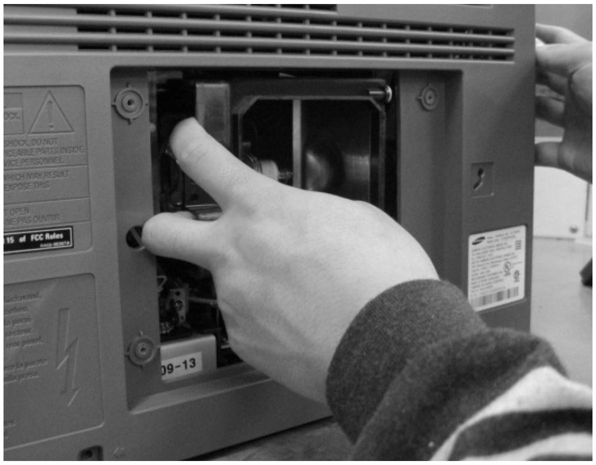
② Remove the Lamp cover.



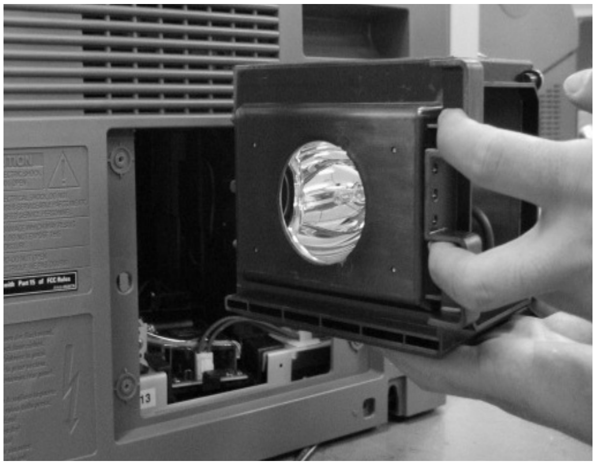
③ Remove the screw securing the Lamp by using a screwdriver.



④ Separate the Lamp from the engine by holding the handle.



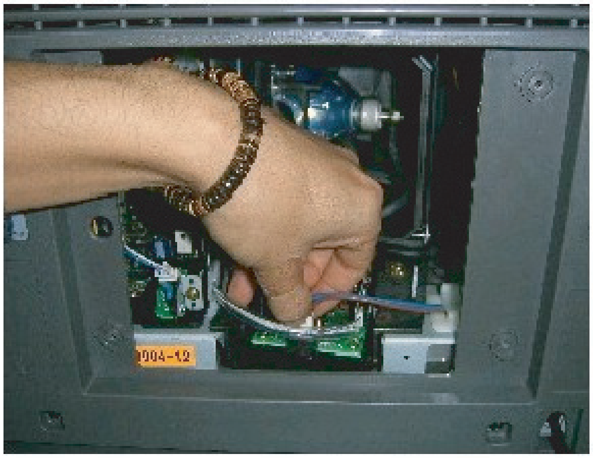
⑤ Pull the Lamp out.



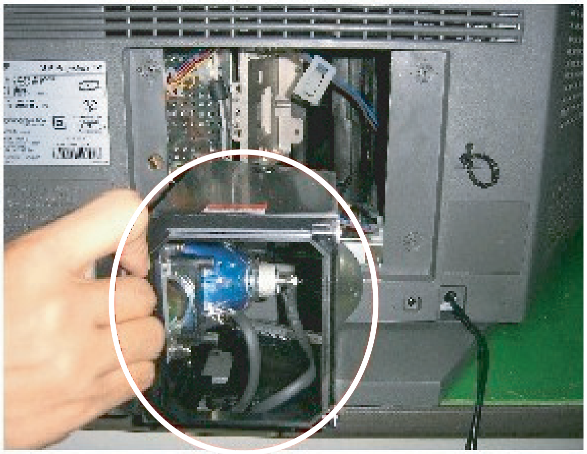
⑥ To reinstall the Lamp, follow these steps in reverse order.

3-6-6 Ballast Replacement

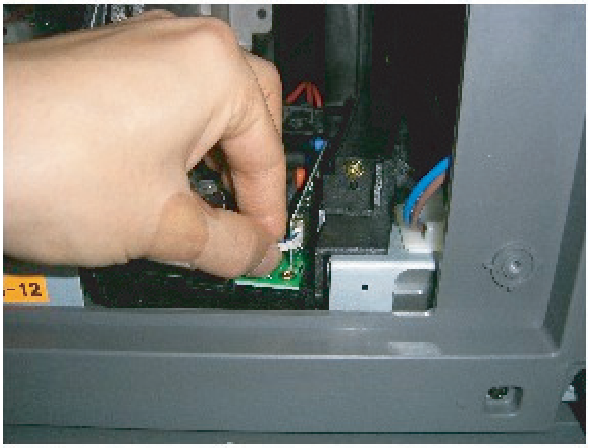
① Remove the Ballast power cable.



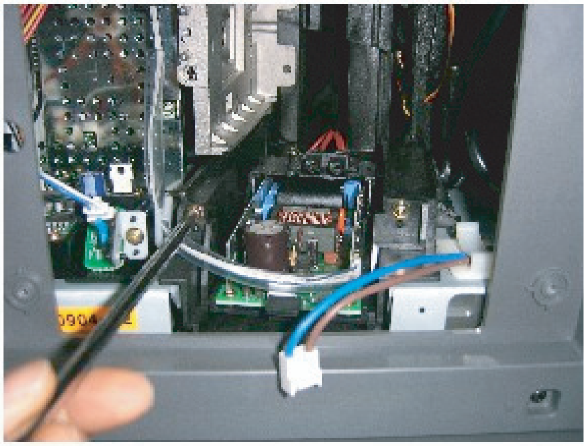
② Disassemble the lamp ass'y.



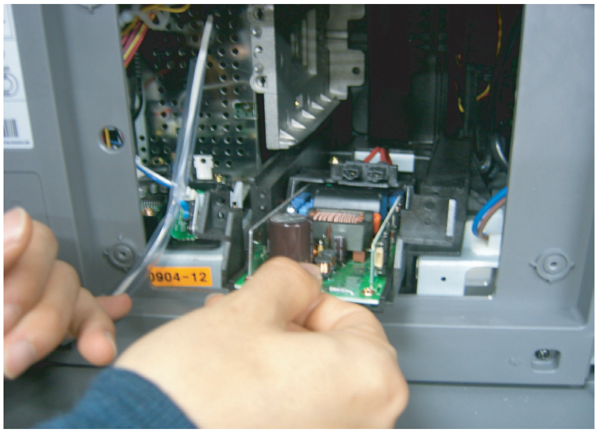
③ Remove the Ballast SCI cable.



④ Remove the two screws at the Holder Ballast.



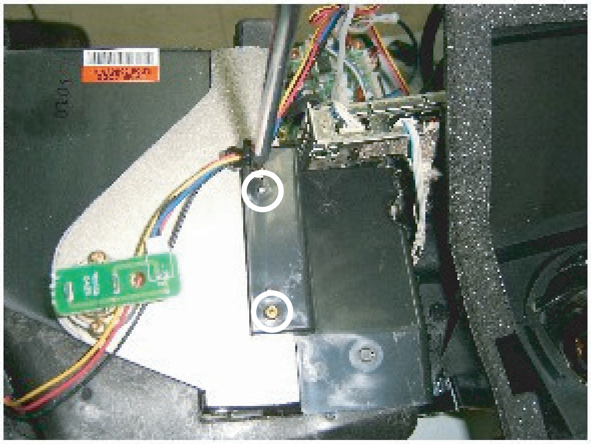
⑤ Pull out the Ballast assembly.



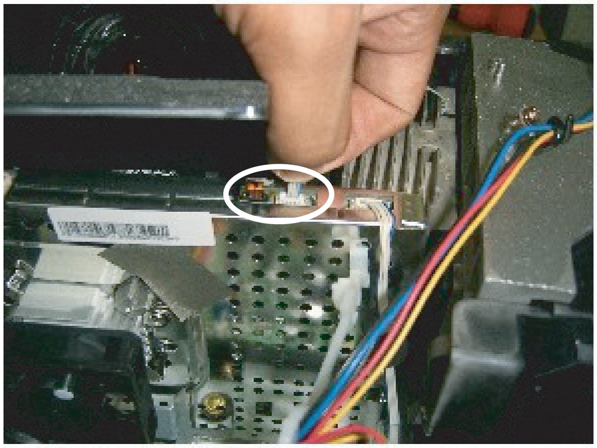
⑥ Replace it with a new one and re-assemble it in the reverse order.

3-6-7 Color Wheel Ass'y Replacement

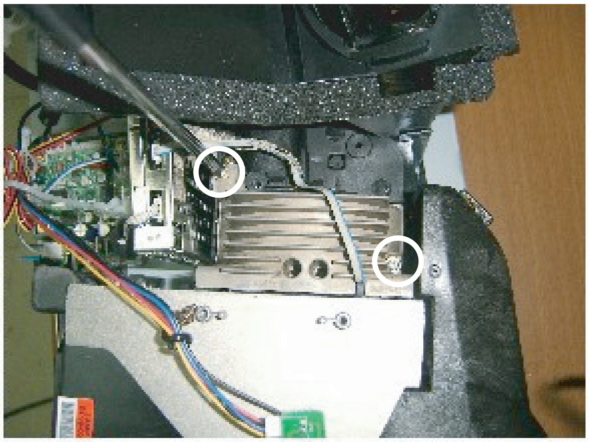
① Disassemble the Cover Color wheel.



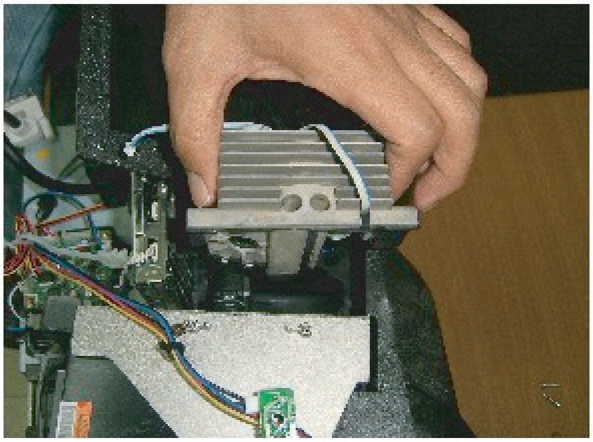
② Remove two cables at the DMD Board.



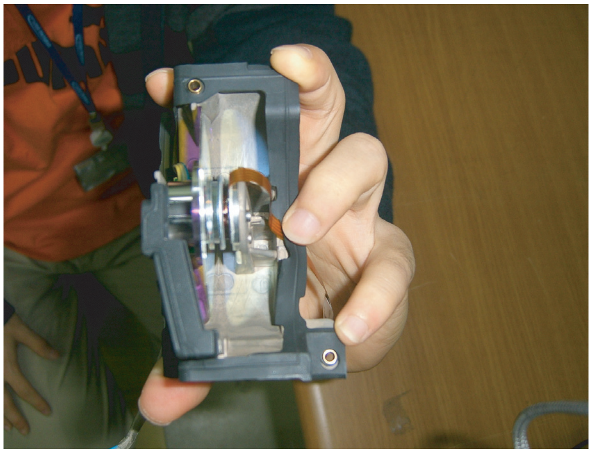
③ Remove two screws.



④ Disassemble the color wheel assembly.



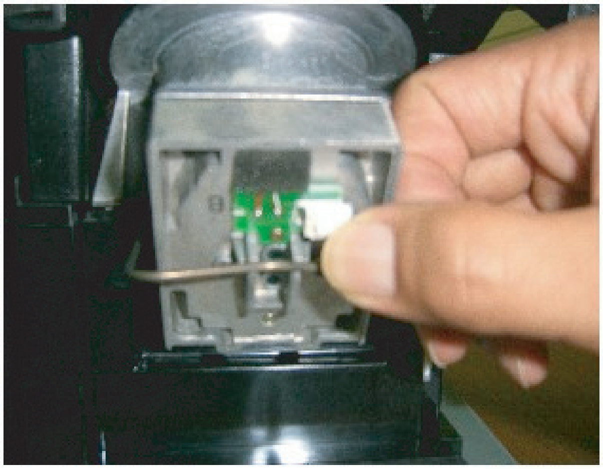
⑤ Replace it with a new color wheel and rubber assembly.



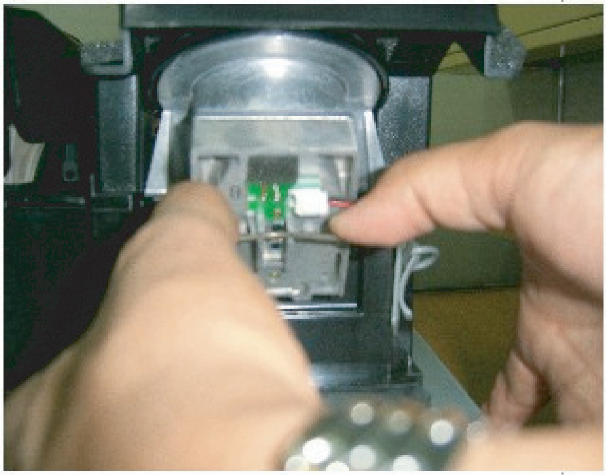
Caution: Never touch the color wheel. Touch only the cover assembly.

3-6-8 Actuator(Smooth Picture) Replacement

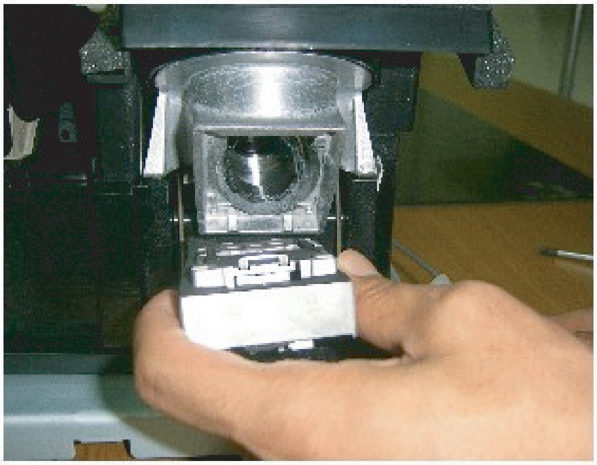
① Remove the cable at the Actuator.



② Push the steel spring wire to bottom of the Actuator Assy.



③ Replace it with a new actuator.

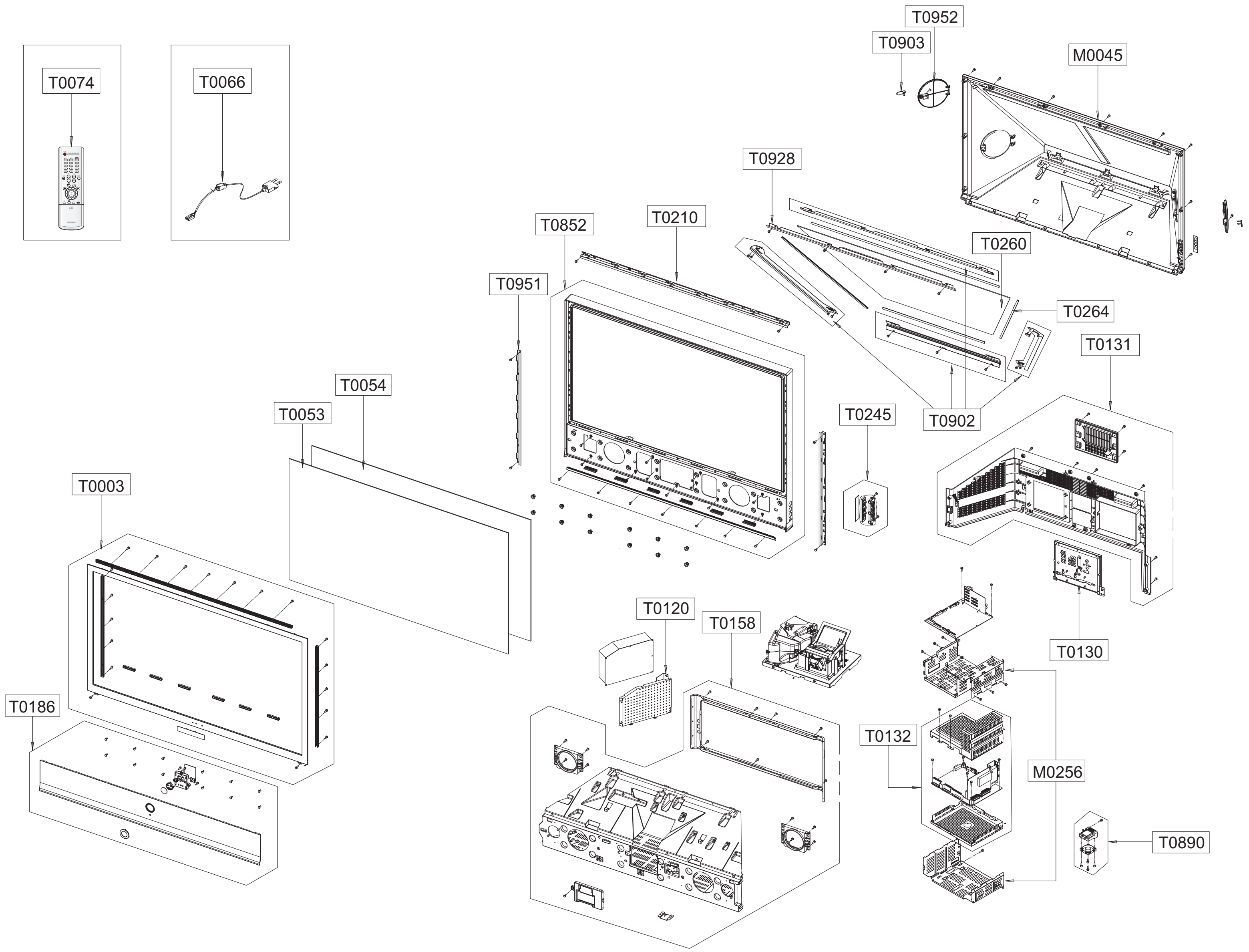


MEMO

4. Exploded View & Parts List

4-1 HLP4667WX/XAA

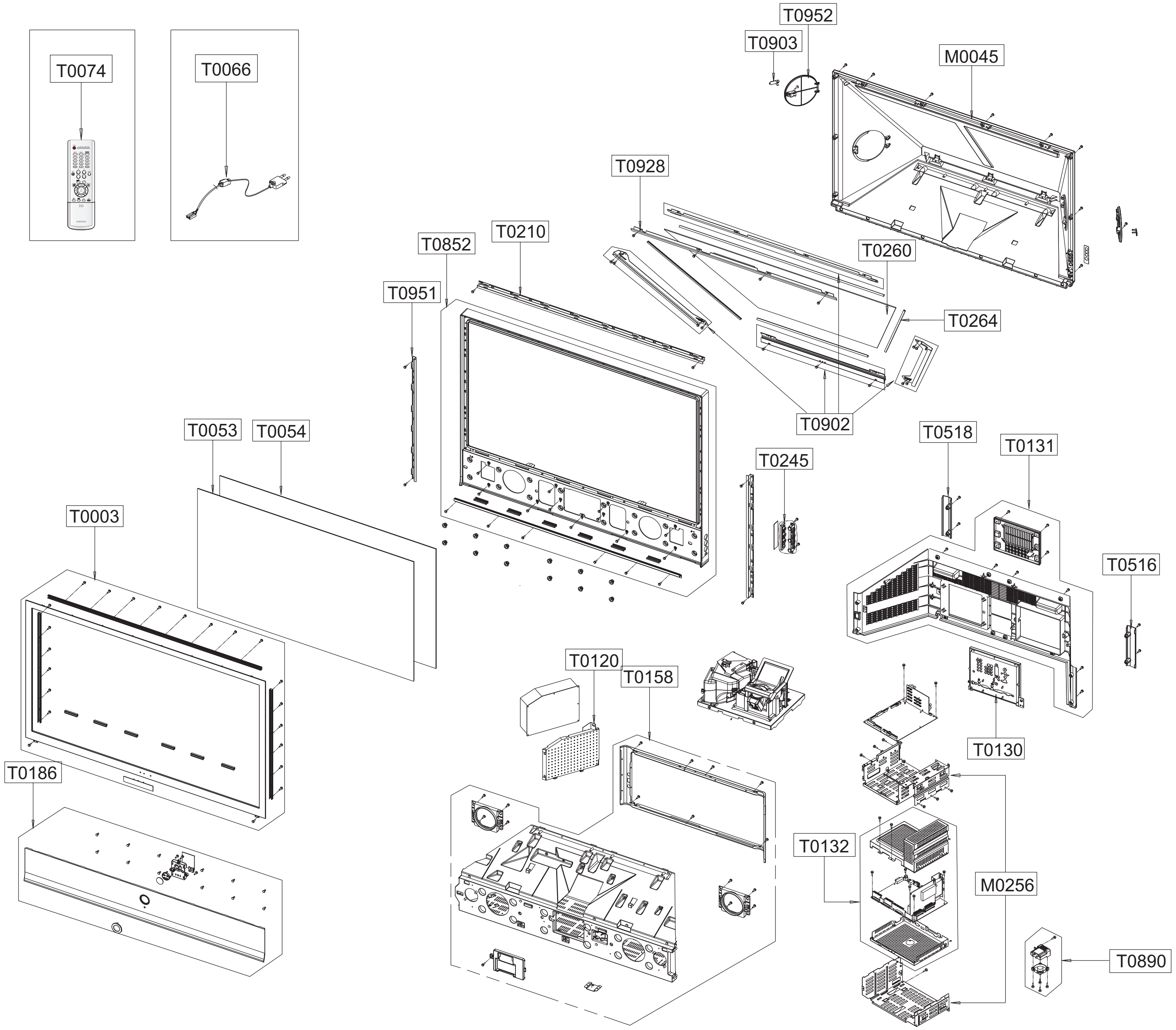
You can search for the updated part code through ITSELF web site.
URL : http://itself.sec.samsung.co.kr



Loc.No.	Code No.	Description;Specification	Q'ty	S.N.A
T0074	BP59-00076A	REMOCON;ROBOCOP,TM76A,200*54*21,47,Light	1	
T0066	AA96-20129A	ASSY POWER CORD;-,EP2/YES,H/C300,ME301P,	1	S.N.A
T0186	BP96-00574D	ASSY COVER P-GRILLE;46L3,SEA,HIPS HB,GR5	1	
T0003	BP96-00572H	ASSY COVER P-FRONT;46L3,SEA(L64A),HIPS H	1	S.N.A
T0054	BP67-00107A	SCREEN LENTI;46W,MS,1021*580.5,2T	1	
T0053	BP67-00108A	SCREEN FRESNEL;46W,1021*580.5,2T	1	
T0210	BP61-00554A	BRACKET-SCREEN,TOP;46L3,SECC,T 1.0	1	S.N.A
T0951	BP61-00556A	BRACKET-SCREEN SIDE;46L3,SECC,T 1.0	2	S.N.A
T0852	BP96-00571F	ASSY COVER P-MIDDLE;46L3,HIPS,HB,GR503,S	1	S.N.A
T0928	BP61-00537A	BRACKET-MIRROR TOP(T);50L3,SECC,T 1.6	1	S.N.A
T0260	BP67-00095A	MIRROR;MIRROR FRONT 46",GLASS,1005X530X5	1	
T0245	BP94-02140D	ASSY PCB MISC-KEY CONTROL;HLP5063W,L62B,	1	
T0902	BP96-00575A	ASSY MISC P-BRKT MIRROR;46L3,SECC	1	S.N.A
T0264	BP60-00032L	SPACER-MIRROR;50L3,EVA,490,T1.0,28	4	S.N.A
T0903	BP61-00528A	HOLDER-DUST;50L3,HIPS HB,GRAY	2	S.N.A
T0952	BP63-00294A	COVER DUST-ASSY;50L3,HIPS HB,GRAY	2	S.N.A
M0045	BP64-00393A	CABINET-BACK,TOP;46L3,HIPS,HB,GRAY	1	
T0131	BP96-00568D	ASSY COVER P-BACK BOT;L3 ALL,HIPS,V0,GRY	1	
T0130	BP96-00848C	ASSY COVER P-TERMINAL BOARD;L3,L64A,HIPS	1	S.N.A
T0890	BP96-00855A	ASSY FAN P;1B1S,50*50*0.5,1.9,0.19,24,-1	1	S.N.A
M0256	BP96-00849B	ASSY BRACKET P-MAIN PCB;L3 (L64A),SECC,T	1	S.N.A
T0132	BP94-02200A	ASSY PCB MISC-DIGITAL;HLP5067WX/XAA,L64A	1	
T0120	BP94-02141B	ASSY PCB POWER;HL-P5067,L62B,AC120V,POD	1	S.N.A
T0158	BP96-00533C	ASSY COVER P-MAIN;L3 ALL,HIPS,V0,GR503	1	

4-2 HLP5067WX/XAA

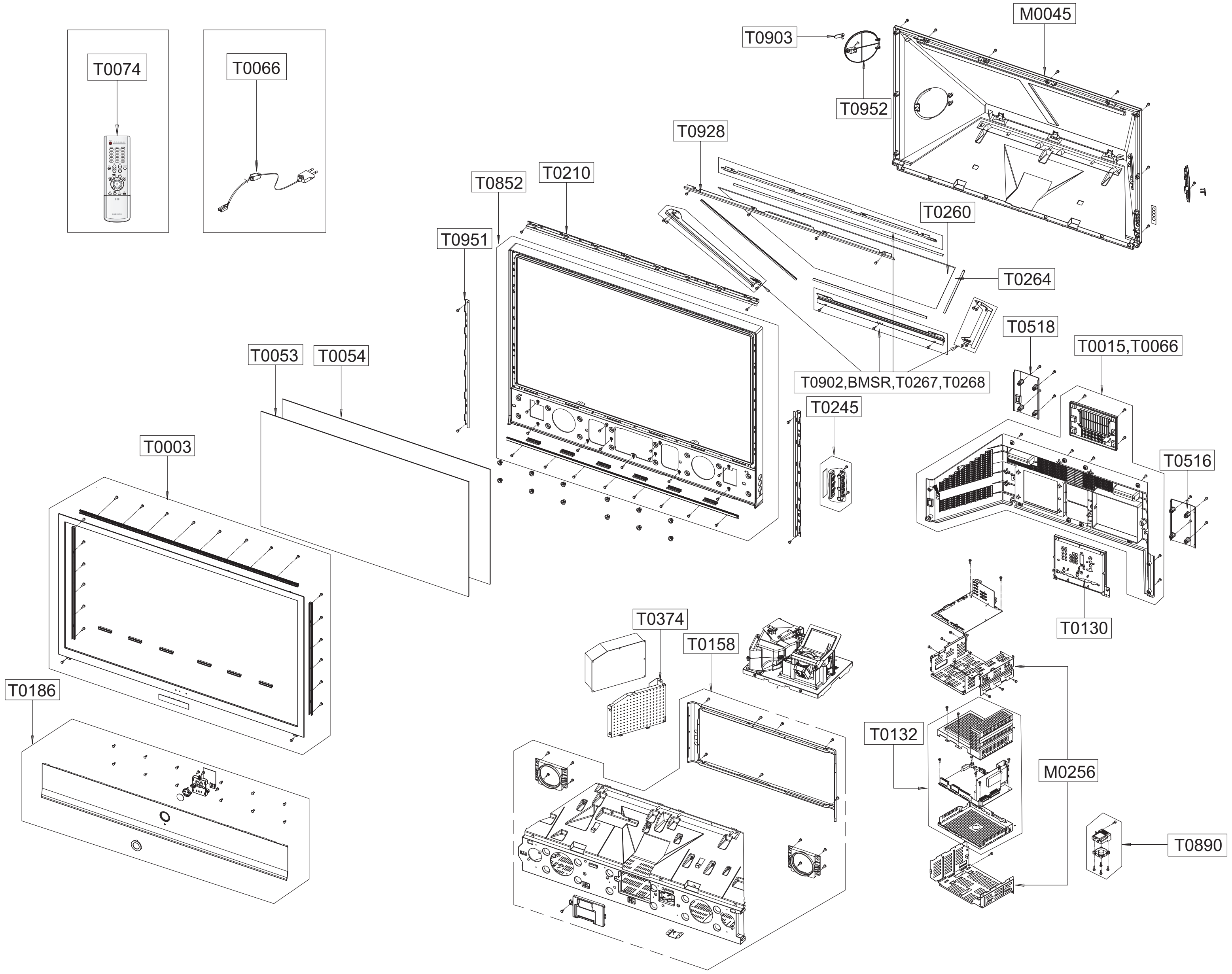
You can search for the updated part code through ITSELF web site.
URL : http://itself.sec.samsung.co.kr



Loc.No.	Code No.	Description;Specification	Q'ty	S.N.A
T0074	BP59-00076A	REMOCON;ROBOCOP,TM76A,200*54*21,47,Light	1	
T0066	AA96-20129A	ASSY POWER CORD;-,EP2/YES,H/C300,ME301P,	1	S.N.A
T0186	BP96-00574D	ASSY COVER P-GRILLE;46L3,SEA,HIPS HB,GR5	1	
T0003	BP96-00532G	ASSY COVER P-FRONT;50L3,HIPS HB,GR503,BK	1	S.N.A
T0210	BP61-00540A	BRACKET-SCREEN TOP;50L3,SECC,T1.0	1	S.N.A
T0951	BP61-00542A	BRACKET-SCREEN SIDE;50L3,SECC,T1.0	2	S.N.A
T0053	BP67-00109A	SCREEN FRESNEL;50W,1126*646,2T	1	
T0054	BP67-00153A	SCREEN LENTI;50W,MS,1126*646,2.1T	1	
T0852	BP96-00531C	ASSY COVER P-MIDDLE;50L3,HIPS,HB,GR503,S	1	S.N.A
T0928	BP61-00537A	BRACKET-MIRROR TOP(T);50L3,SECC,T 1.6	1	S.N.A
T0260	BP67-00096A	MIRROR;MIRROR FRONT 50",GLASS,1100X580X5	1	
T0245	BP94-02140D	ASSY PCB MISC-KEY CONTROL;HLP5063W,L62B,	1	
T0902	BN96-01187A	ASSY MISC P-BRKT MIRROR;50L3,SECC	1	S.N.A
T0264	BP60-00032L	SPACER-MIRROR;50L3,EVA,490,T1.0,28	4	S.N.A
T0903	BP61-00528A	HOLDER-DUST;50L3,HIPS HB,GRAY	2	S.N.A
T0952	BP63-00294A	COVER DUST-ASSY;50L3,HIPS HB,GRAY	2	S.N.A
M0045	BP64-00380A	CABINET BACK-TOP;50L3,HIPS,3.5,HB,GRAY	1	
T0131	BP96-00568D	ASSY COVER P-BACK BOT;L3 ALL,HIPS,V0,GRY	1	
T0518	BP61-00526A	HOLDER-BACK LEFT;50L3,HIPS HB,GRAY	1	S.N.A
T0516	BP61-00527A	HOLDER-BACK RIGHT;50L3,HIPS HB,GRAY	1	S.N.A
T0130	BP96-00848C	ASSY COVER P-TERMINAL BOARD;L3,L64A,HIPS	1	S.N.A
T0890	BP96-00855A	ASSY FAN P;1B1S,50*50*0.5,1.9,0.19,24,-1	1	S.N.A
M0256	BP96-00849B	ASSY BRACKET P-MAIN PCB;L3 (L64A),SECC,T	1	S.N.A
T0132	BP94-02200A	ASSY PCB MISC-DIGITAL;HLP5067WX/XAA,L64A	1	
T0120	BP94-02141B	ASSY PCB POWER;HL-P5067,L62B,AC120V,POD	1	S.N.A
T0158	BP96-00533C	ASSY COVER P-MAIN;L3 ALL,HIPS,V0,GR503	1	

4-3 HLP5667WX/XAA

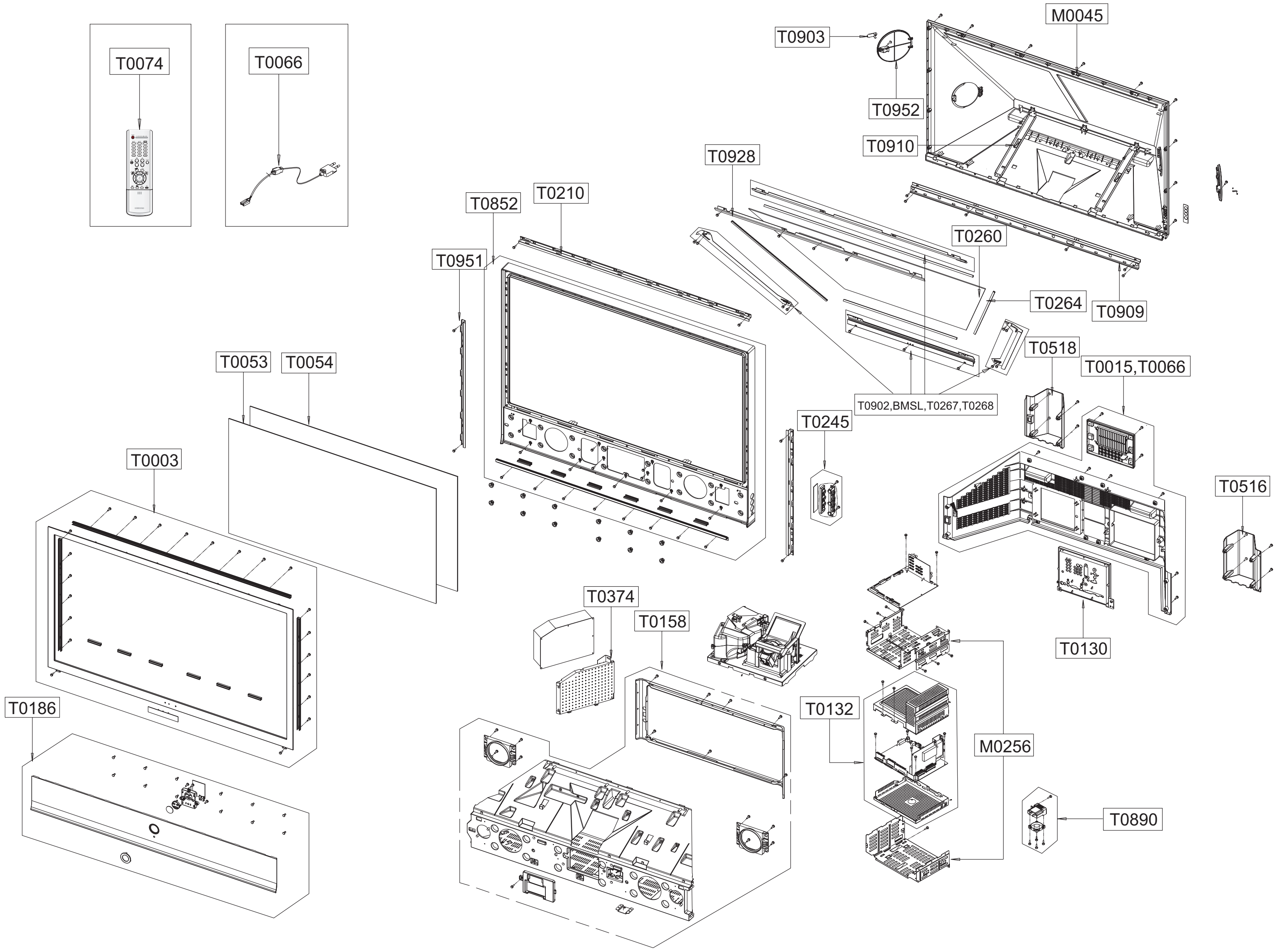
You can search for the updated part code through ITSELF web site.
URL : http://itself.sec.samsung.co.kr



Loc.No.	Code No.	Description;Specification	Q'ty	S.N.A
T0074	BP59-00076A	REMOCON;ROBOCOP,TM76A,200*54*21,47,Light	1	
T0066	AA96-20129A	ASSY POWER CORD;-,EP2/YES,H/C300,ME301P,	1	S.N.A
T0186	BP96-00587B	ASSY COVER P-GRILLE;56L3,SEA,HIPS HB,GR5	1	
T0003	BP96-00585F	ASSY COVER P-FRONT;56L3,SEA(L64A),HIPS H	1	
T0053	BP67-00111A	SCREEN FRESNEL;56W,1257*713.5,2T	1	
T0054	BP67-00110A	SCREEN LENTI;56W,MS,1257*713.5,2T	1	
T0210	BP61-00849A	BRACKET-SCREEN TOP;DP,BP61-00564A,56L3,S	1	S.N.A
T0951	BP61-00850A	BRACKET-SCREEN SIDE;DP,BP61-00566A,56L3,	2	S.N.A
T0852	BP96-00583A	ASSY COVER P-MIDDLE;56L3,HIPS,HB,GR503,S	1	S.N.A
T0245	BP94-02140E	ASSY PCB MISC-KEY CONTROL;HLP5663/6163W,	1	
T0928	BP61-00560A	BRACKET-MIRROR,TOP(T);56L3,AL6063 EXTR,T	1	S.N.A
T0902	BP61-00550A	BRACKET-MIRROR,SIDE,R;56L3,SECC,T1.2	1	S.N.A
BMSR	BP61-00559A	BRACKET-MIRROR,SIDE,L;56L3,SECC,T 1.2,GR	1	S.N.A
T0267	BP61-00561A	BRACKET-MIRROR,TOP;56L3,AL6063 EXTR	1	S.N.A
T0268	BP61-00562A	BRACKET-MIRROR,BOT;56L3,AL6063 EXTR ,BLK	1	S.N.A
T0260	BP67-00097A	MIRROR;Front Mirror 56",GLASS,1279X650X6	1	
T0264	BP60-00032M	SPACER-MIRROR;56L3,EVA,620,T1.0,28	4	S.N.A
M0045	BP64-00397A	CABINET BACK-TOP;56L3,HIPS,HB,GRAY	1	
T0952	BP63-00236A	COVER DUST;50L3,HIPS HB,GRAY	2	S.N.A
T0903	BP61-00528A	HOLDER-DUST;50L3,HIPS HB,GRAY	2	S.N.A
T0518	BP61-00557A	HOLDER-BACK,LEFT;56L3,HIPS V0,GRAY	1	S.N.A
T0516	BP61-00558A	HOLDER-BACK,RIGHT;56L3,HIPS V0,GRAY	1	S.N.A
T0015	BP64-00379B	CABINET BACK-BOT;50L3,HIPS,T3.5,V0,Gray,	1	
T0066	BP96-00562A	ASSY COVER P-DUCT;DP,BP96-00535C,50L3	1	S.N.A
T0130	BP96-00875A	ASSY COVER P-TERMINAL BOARD;DP,BP96-0084	1	S.N.A
T0890	BP96-00855A	ASSY FAN P;1B1S,50*50*0.5,1.9,0.19,24,-1	1	S.N.A
M0256	BP96-00849B	ASSY BRACKET P-MAIN PCB;L3 (L64A),SECC,T	1	S.N.A
T0132	BP94-02200A	ASSY PCB MISC-DIGITAL;HLP5067WX/XAA,L64A	1	
T0158	BP96-00533D	ASSY COVER P-MAIN;L3,HIPS,V0,GR503,(NO-U	1	S.N.A
T0374	BP94-01719A	ASSY PCB MISC-POWER;HLP5067WS/XAA,L64A,B	1	

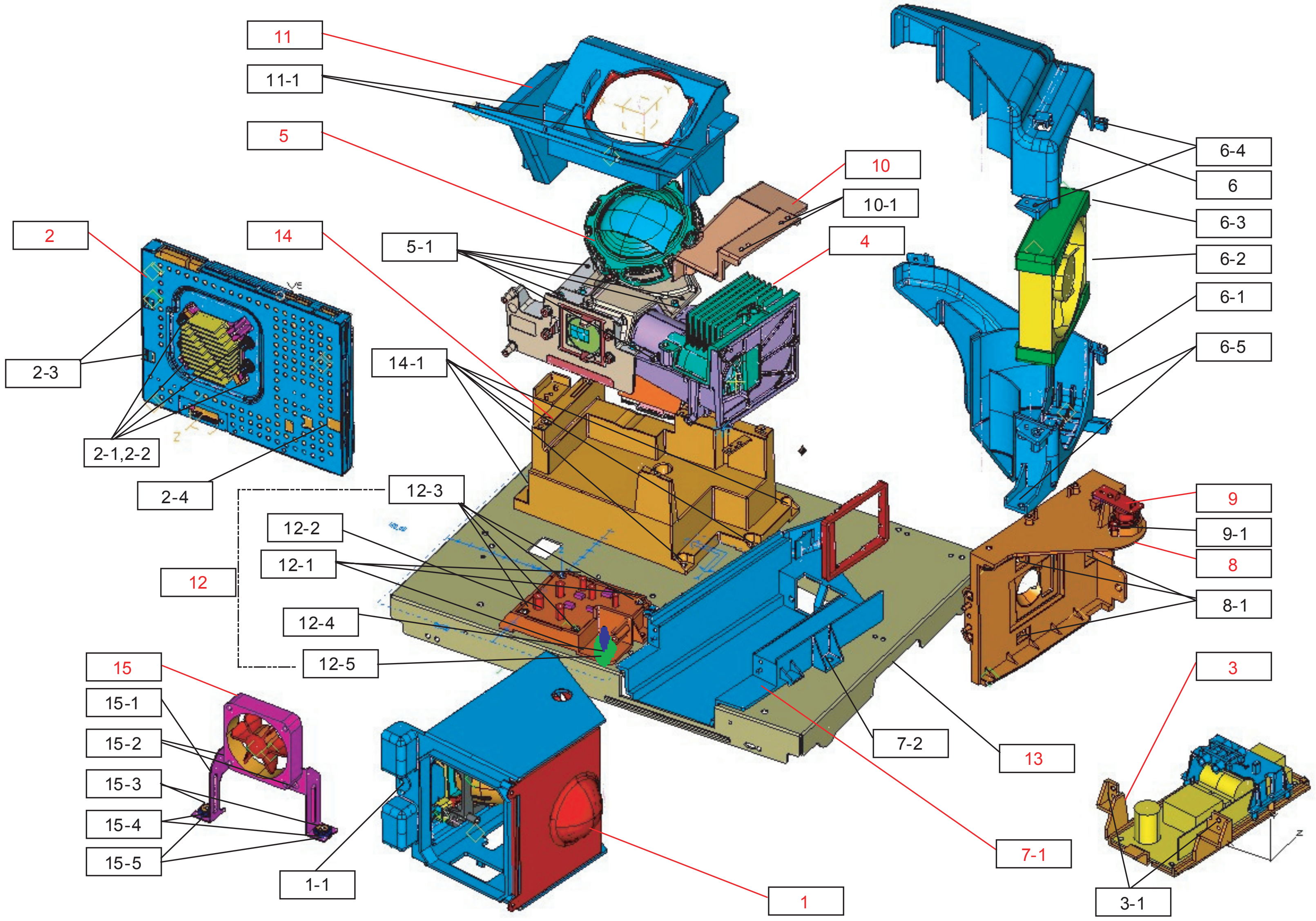
4-4 HLP6167WX/XAA

You can search for the updated part code through ITSELF web site.
URL : http://itself.sec.samsung.co.kr



Loc.No.	Code No.	Description;Specification	Q'ty	S.N.A
T0074	BP59-00076A	REMOCON;ROBOCOP,TM76A,200*54*21,47,Light	1	
T0066	AA96-20129A	ASSY POWER CORD;-,EP2/YES,H/C300,ME301P,	1	S.N.A
T0186	BP96-00588B	ASSY COVER P-GRILLE;61L3,SEA,HIPS HB,GR5	1	S.N.A
T0003	BP96-00586F	ASSY COVER P-FRONT;61L3,SEA(L64A),HIPS H	1	
T0053	BP67-00112A	SCREEN FRESNEL;61W,1381*790,1.5T	1	
T0054	BP67-00156A	SCREEN LENTI;61W,MS,1381*790,2.1T	1	
T0210	BP61-00575A	BRACKET-SCREEN,TOP;61L3,AL6063 EXTR,T1.5	1	S.N.A
T0951	BP61-00577A	BRACKET-SCREEN,SIDE;61L3,AL6063 EXTR,T1.	1	S.N.A
T0852	BP96-00584B	ASSY COVER P-MIDDLE;61L3,HIPS,HB,GR503,S	1	S.N.A
T0245	BP94-02140E	ASSY PCB MISC-KEY CONTROL;HLP5663/6163W,	1	
T0928	BP61-00560A	BRACKET-MIRROR,TOP(T);56L3,AL6063 EXTR,T	1	S.N.A
T0902	BP61-00570A	BRACKET-MIRROR,SIDE,R;61L3,SECC,T 1.2	1	S.N.A
BMSL	BP61-00569A	BRACKET-MIRROR,SIDE,L;61L3,SECC,T 1.2	1	S.N.A
T0267	BP61-00561A	BRACKET-MIRROR,TOP;56L3,AL6063 EXTR	1	S.N.A
T0268	BP61-00562A	BRACKET-MIRROR,BOT;56L3,AL6063 EXTR ,BLK	1	S.N.A
T0260	BP67-00098A	MIRROR;FRONT MIRROR 61",GLASS,34.85MM,13	1	
T0264	BP60-00032M	SPACER-MIRROR;56L3,EVA,620,T1.0,28	4	S.N.A
M0045	BP64-00399A	CABINET BACK-TOP;61L3,HIPS,HB,GRAY	1	
T0952	BP63-00236A	COVER DUST;50L3,HIPS HB,GRAY	2	S.N.A
T0903	BP61-00528A	HOLDER-DUST;50L3,HIPS HB,GRAY	2	S.N.A
T0518	BP61-00567A	HOLDER-BACK,LEFT;61L3,HIPS V0,GRAY	1	S.N.A
T0516	BP61-00568A	HOLDER-BACK,RIGHT;61L3,HIPS V0,GRAY	1	S.N.A
T0015	BP64-00379B	CABINET BACK-BOT;50L3,HIPS,T3.5,V0,Gray,	1	
T0066	BP96-00562A	ASSY COVER P-DUCT;DP,BP96-00535C,50L3	1	S.N.A
T0130	BP96-00875A	ASSY COVER P-TERMINAL BOARD;DP,BP96-0084	1	S.N.A
T0890	BP96-00855A	ASSY FAN P;1B1S,50*50*0.5,1.9,0.19,24,-1	1	S.N.A
M0256	BP96-00849B	ASSY BRACKET P-MAIN PCB;L3 (L64A),SECC,T	1	S.N.A
T0132	BP94-02200A	ASSY PCB MISC-DIGITAL;HLP5067WX/XAA,L64A	1	
T0158	BP96-00533D	ASSY COVER P-MAIN;L3,HIPS,V0,GR503,(NO-U	1	S.N.A
T0374	BP94-01719A	ASSY PCB MISC-POWER;HLP5067WS/XAA,L64A,B	1	
T0909	BP61-00574A	BRACKET-BACK,TOP;61L3,AL6063 EXTR,T2.0,B	1	S.N.A

4-5 ENGINE ASS'Y



L3 Engine Exploded View List

NO.	Description	CODE NO.	Specification	Q'TY
1	ASSY LAMP P	BP96-00826A	L3,LAMP SERVICE,PHILIPS 120W,E22	1
1-1	SCREW-MACHINE	6006-001039	WSP,PH,+,M4,L12,ZPC(YEL),SM10C	1
2	ASSY DMD BOARD P	BP96-00678B	L3 PHILIPS,DMD BOARD,SERVICE	1
2-1	SPRING ETC-COIL,DMD	AA61-01195A	B3K,SPRING STEEL	4
2-2	SCREW-MACHINE	6001-000819	PWH,+,-,M3,L30,ZPC(YEL),SWRCH10A,UP,-	4
2-3	SCREW-TAPTITE	6006-000248	PWH,+,-,S,M3,L8,ZPC(YEL),SWRCH18A,P0	2
2-4	SCREW-TAPTITE	6003-000264	PWH,+,B,M3,L6,ZPC(YEL),SWRCH18	1
3	ASSY BALLAST P	BP96-00690A	L3,SERVICE BALLST	1
3-1	SCREW-TAPTITE	6003-001023	PWH,+,B,M3,L10,ZPC(YEL),SWRCH18A,-	2
4	ASSY K/D-COLOR WHEEL	BP98-00489A	L3 ENGINE,SERVICE	1
5	ASSY K/D-OPTIC MODULE	BP98-00490B	L3 ENGINE(FDB),SERVICE	1
5-1	SCREW-TAPTITE	6003-000277	BH,+,B,M3,L12,ZPC(YEL),SWRCH18	5
6	COVER DUCT-TOP23	BP63-00295A	SVP-50L3HR,PC G/F20	1
6-1	COVER DUCT-BOTTOM23	BP63-00296A	SVP-50L3HR,PC G/F20	1
6-2	FAN-DC	BP31-00010B	SVP-50L7XHD,UL94V-0, PBT,Wire Length = 500mm	1
6-3	RUBBER-FAN,LAMP	BP73-00012A	SHP700,NBR,50,LOSS FACTOR>0.02	2
6-4	SCREW-TAPTITE	6003-001023	PWH,+,B,M3,L10,ZPC(YEL),SWRCH18A,-	3
6-5	SCREW-MACHINE	6006-001039	WSP,PH,+,M4,L12,ZPC(YEL),SM10C	3
7	GUIDE-BALLAST 23	BP61-00732A	SVP-50L3HR,PC G/F 20	1
7-1	HOLDER-BALLAST 23	BP61-00728A	SVP-50L3HR,PC G/F20	1
7-2	SCREW-MACHINE	6006-001039	WSP,PH,+,M4,L12,ZPC(YEL),SM10C	3
8	HOUSING-LAMP,BOTTOM 23	BP61-00726A	SVP-50L3HR,AL D/C	1
8-1	SCREW-TAPTITE	6006-000249	PWH M/S (S.P/W) M3*L7 P0.75	3
9	ASSY MISC-THERMOSTAT	BP91-00612A	HLP5063W,L62B	1
9-1	SCREW-MACHINE	6006-001035	PH M/S (S.P/W) M3*L8 P0.5	2
10	COVER-CW 23	BP63-00299A	SVP-50L3HR,PC G/F20	1
10-1	SCREW-MACHINE	6006-001035	PH M/S (S.P/W) M3*L8 P0.5	2
11	COVER-LENS PROJECTION	BP63-00338A	SVP-50L3,PS,T0.3	1
11-1	SCREW-TAPTITE	6003-001023	PWH B-T M3*L10	2
12	HOLDER-INTERFACE	BP61-00668A	SVP-50L3HR,ABS V0 BLK	1
12-1	SCREW-MACHINE	6006-001039	WSP,PH,+,M4,L12,ZPC(YEL),SM10C	3
12-2	ASSY PCB S-ACTUATOR	BP94-02149K	DP,BP41-00121A,L62B,ATLANTIS	1
12-3	SCREW-TAPTITE	6003-001023	PWH B-T M3*L10	4
12-4	ASSY MISC-DETECTOR S/W	BP91-00775A	ASSY MISC-DETECTOR S/W	1
12-5	SCREW-TAPTITE	6003-001023	PWH B-T M3*L10	1
13	BRACKET-BASE 23	BP61-00730A	SVP-50L3HR,SECC,1.6	1
14	HOLDER-BASE	BP61-00590A	DLP L3,PPS G/F30	1
14-1	SCREW-MACHINE	6006-001039	WSP,PH,+,M4,L12,ZPC(YEL),SM10C	6
15	FAN-DC	BP31-00011A	AD0612LB-D72GL,P.B.T UL94-Vo,Wire+Metal Bracket	1
15-1	BRACKET-FAN DMD	BP61-00595A	DLP L3,SECC,T1.0	1
15-2	SCREW-TAPTITE	6006-000250	BH,+,WT,B,M3,L20,ZPC(YEL),SWRCH18A,-	2
15-3	SCREW-TAPTITE	6003-000199	PWH,+,B,M3,L14,ZPC(YEL),SWRCH1	2
15-4	HOLDER-SPACER,RUBBER	BN61-00236A	B3K,BSBM	2
15-5	RUBBER-DAMP FAN	BP73-00040A	HLN507W,CR,30,BLACK,V0	2

5. Service Item

5-1 HLP4667WX/XAA

Yon can search for the updated part code through ITSELF web site.
URL:http://itself.sec.samsung.co.kr

Loc.No.	Code No.	Description;Specification	Q'ty
TU3S	AA40-00122A	TUNER;TMQH2-003A,C-TV TM(SUB),NTSC,181CH	1
T0952	AA59-00365A	MODULE-RF SPLITTER;UMX-NT-040,2in/2out/l	1
T0128	BN39-00518A	CBF SIGNAL-STEREO;NA32KO,1P,UL2464#26,20	1
M0125	BP39-00106C	CBF SIGNAL-DVI(D);HLP5063WX,24P/24P,2027	1
T0049	BP47-00021A	LAMP-BALLAST;EUC 120 P/H11,120W,130mm ca	1
T0074	BP59-00076A	REMOCON;ROBOCOP,TM76A,200*54*21,47,Light	1
T0015	BP64-00379B	CABINET BACK-BOT;50L3,HIPS,T3.5,V0,Gray,	1
M0045	BP64-00393A	CABINET-BACK,TOP;46L3,HIPS,HB,GRAY	1
T0003	BP64-00395E	CABINET FRONT;46L3,HIPS,HB,GR503,BKM1326	1
T0054	BP67-00107A	SCREEN LENTI;46W,MS,1021*580.5,2T	1
T0053	BP67-00108A	SCREEN FRESNEL;46W,1021*580.5,2T	1
T0145	BP94-02032A	ASSY PCB MISC-ANALOG;HLP5067WX/XAA,L64A,	1
T0091	BP94-02140C	ASSY PCB MISC-SIDE AV;HLP5063W,L62B,ATLA	1
T0120	BP94-02141B	ASSY PCB POWER;HL-P5067,L62B,AC120V,POD	1
T0132	BP94-02200A	ASSY PCB MISC-DIGITAL;HLP5067WX/XAA,L64A	1
T0175	BP96-00542A	ASSY SPEAKER P;8ohm,3001-001282,25W,L3 W	2
T0175	BP96-00543A	ASSY SPEAKER P;8ohm,BP96-00542A,3001-001	1
CN269	BP96-00547C	ASSY BOARD P-JACK;ROBOCOP_1,NTSC,AV+S.VH	1
T0131	BP96-00568D	ASSY COVER P-BACK BOT;L3 ALL,HIPS,V0,GRY	1
T0003	BP96-00572H	ASSY COVER P-FRONT;46L3,SEA(L64A),HIPS H	1
T0186	BP96-00574D	ASSY COVER P-GRILLE;46L3,SEA,HIPS HB,GR5	1
T0902	BP96-00575A	ASSY MISC P-BRKT MIRROR;46L3,SECC	1
T0889	BP96-00674A	ASSY COLOR WHEEL P;SVP-50L3HR	1
T0703	BP96-00678B	ASSY DMD BOARD P;L3 PHILIPS,DMD BOARD,SE	1
T0751	BP96-00690A	ASSY BALLAST P;L3,SERVICE BALLST	1
T0129	BP96-00822B	ASSY ENGINE P-DLP PWL3;L3(FDB),PHILIPS E	1
T0888	BP96-00826A	ASSY LAMP P;L3,LAMP SERVICE,PHILIPS 120W	1
M0018	BP97-00836A	ASSY MICOM;,L62B,29DL32,HD3_DMD_V3.0,200	1
T0269	BP94-00485A	ASSY PCB S-ACTUATOR/SUB DETECTOR;HLP5063WX	1
T0260	BP67-00095A	MIRROR;MIRROR FRONT 46,GLASS,1005X530X5	1

5-2 HLP5067WX/XAA

Yon can search for the updated part code through ITSELF web site.
URL:http://itself.sec.samsung.co.kr

Loc.No.	Code No.	Description;Specification	Q'ty
D0254	AA32-00012A	MODULE REMOCON;ORC-50HF2,38KHZ,940NM,MES	1
TU3S	AA40-00122A	TUNER;TMQH2-003A,C-TV TM(SUB),NTSC,181CH	1
T0952	AA59-00365A	MODULE-RF SPLITTER;UMX-NT-040,2in/2out/l	1
M0125	BP39-00106C	CBF SIGNAL-DVI(D);HLP5063WX,24P/24P,2027	1
T0049	BP47-00021A	LAMP-BALLAST;EUC 120 P/H11,120W,130mm ca	1
T0074	BP59-00076A	REMOCON;ROBOCOP,TM76A,200*54*21,47,Light	1
T0015	BP64-00379B	CABINET BACK-BOT;50L3,HIPS,T3.5,V0,Gray,	1
M0045	BP64-00380A	CABINET BACK-TOP;50L3,HIPS,3.5,HB,GRAY	1
T0053	BP67-00109A	SCREEN FRESNEL;50W,1126*646,2T	1
T0054	BP67-00153A	SCREEN LENTI;50W,MS,1126*646,2.1T	1
T0145	BP94-02032A	ASSY PCB MISC-ANALOG;HLP5067WX/XAA,L64A,	1
T0091	BP94-02140C	ASSY PCB MISC-SIDE AV;HLP5063W,L62B,ATLA	1
T0120	BP94-02141B	ASSY PCB POWER;HL-P5067,L62B,AC120V,POD	1
T0132	BP94-02200A	ASSY PCB MISC-DIGITAL;HLP5067WX/XAA,L64A	1
T0003	BP96-00532G	ASSY COVER P-FRONT;50L3,HIPS HB,GR503,BK	1
T0158	BP96-00533C	ASSY COVER P-MAIN;L3 ALL,HIPS,V0,GR503	1
T0186	BP96-00534D	ASSY COVER P-GRILLE;50L3,HIPS HB,GR503,S	1
T0175	BP96-00542A	ASSY SPEAKER P;8ohm,3001-001282,25W,L3 W	2
T0175	BP96-00543A	ASSY SPEAKER P;8ohm,BP96-00542A,3001-001	1
CN269	BP96-00547C	ASSY BOARD P-JACK;ROBOCOP_1,NTSC,AV+S.VH	1
T0131	BP96-00568D	ASSY COVER P-BACK BOT;L3 ALL,HIPS,V0,GRY	1
T0889	BP96-00674A	ASSY COLOR WHEEL P;SVP-50L3HR	1
T0703	BP96-00678B	ASSY DMD BOARD P;L3 PHILIPS,DMD BOARD,SE	1
T0751	BP96-00690A	ASSY BALLAST P;L3,SERVICE BALLST	1
T0129	BP96-00822B	ASSY ENGINE P-DLP PWL3;L3(FDB),PHILIPS E	1
T0888	BP96-00826A	ASSY LAMP P;L3,LAMP SERVICE,PHILIPS 120W	1
M0018	BP97-00836A	ASSY MICOM;,L62B,29DL32,HD3_DMD_V3.0,200	1
T0902	BP96-00575A	ASSY MISC P-BRKT MIRROR;46L3,SECC	1
T0269	BP94-00485A	ASSY PCB S-ACTUATOR/SUB DETECTOR;HLP5063WX	1
T0260	BP67-00096A	MIRROR;MIRROR FRONT 50,GLASS1100X580X5	1

5-3 HLP5667WX/XAA

Yon can search for the updated part code through ITSELF web site.
URL:http://itself.sec.samsung.co.kr

Loc.No.	Code No.	Description;Specification	Q'ty
D0254	AA32-00012A	MODULE REMOCON;ORC-50HF2,38KHZ,940NM,MES	1
T0268	AA39-10007Y	CBF-POWER CORD;-,EP2/YES,SPT-2 18AWGx2C,	1
CIS3	AA40-00122A	TUNER;TMQH2-003A,C-TV TM(SUB),NTSC,181CH	1
T0952	AA59-00365A	MODULE-RF SPLITTER;UMX-NT-040,2in/2out/l	1
T0128	BN39-00518A	CBF SIGNAL-STEREO;NA32KO,1P,UL2464#26,20	1
M0125	BP39-00106C	CBF SIGNAL-DVI(D);HLP5063WX,24P/24P,2027	1
T0049	BP47-00021A	LAMP-BALLAST;EUC 120 P/H11,120W,130mm ca	1
T0074	BP59-00076A	REMOCON;ROBOCOP,TM76A,200*54*21,47,Light	1
T0015	BP64-00379B	CABINET BACK-BOT;50L3,HIPS,T3.5,V0,Gray,	1
M0045	BP64-00397A	CABINET BACK-TOP;56L3,HIPS,HB,GRAY	1
T0260	BP67-00097A	MIRROR;Front Mirror 56",GLASS,1279X650X6	1
T0054	BP67-00110A	SCREEN LENTI;56W,MS,1257*713.5,2T	1
T0053	BP67-00111A	SCREEN FRESNEL;56W,1257*713.5,2T	1
T0374	BP94-01719A	ASSY PCB MISC-POWER;HLP5067WS/XAA,L64A,B	1
T0145	BP94-02032A	ASSY PCB MISC-ANALOG;HLP5067WX/XAA,L64A,	1
T0245	BP94-02140E	ASSY PCB MISC-KEY CONTROL;HLP5663/6163W,	1
T0268	BP94-02140G	ASSY PCB MISC-RMC LED;HLP5063W,L62B,ATLA	1
T0091	BP94-02140H	ASSY PCB MISC-SIDE A/V;HLP5663/6163,L62B	1
T0137	BP94-02149H	ASSY PCB MISC-DETECOTR S/W;DP,AA41-00756	1
T0132	BP94-02200A	ASSY PCB MISC-DIGITAL;HLP5067WX/XAA,L64A	1
T0175	BP96-00542A	ASSY SPEAKER P;8ohm,3001-001282,25W,L3 W	2
CN269	BP96-00547B	ASSY BOARD P-JACK;ROBOCOP,NTSC,AV+S.VHS+	1
T0003	BP96-00585F	ASSY COVER P-FRONT;56L3,SEA(L64A),HIPS H	1
T0186	BP96-00587B	ASSY COVER P-GRILLE;56L3,SEA,HIPS HB,GR5	1
T0269	BP94-00485A	ASSY PCB S-ACTUATOR/SUB DETECT;HLP5063WX	1
T0260	BP67-00097A	MIRROR;Front Mirror 56",GLASS,1279X650X6	1

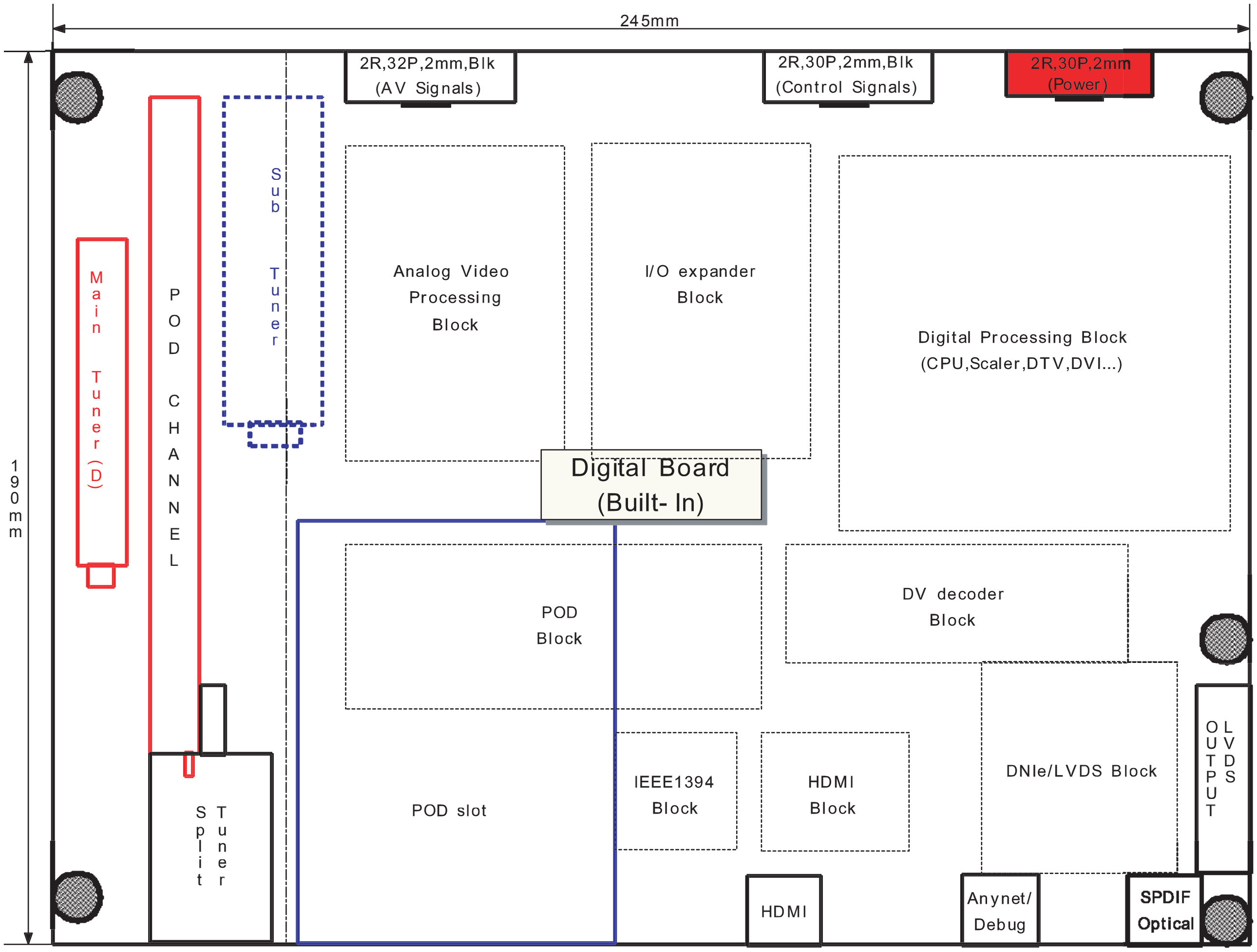
5-4 HLP6167WX/XAA

Yon can search for the updated part code through ITSELF web site.
URL:http://itself.sec.samsung.co.kr

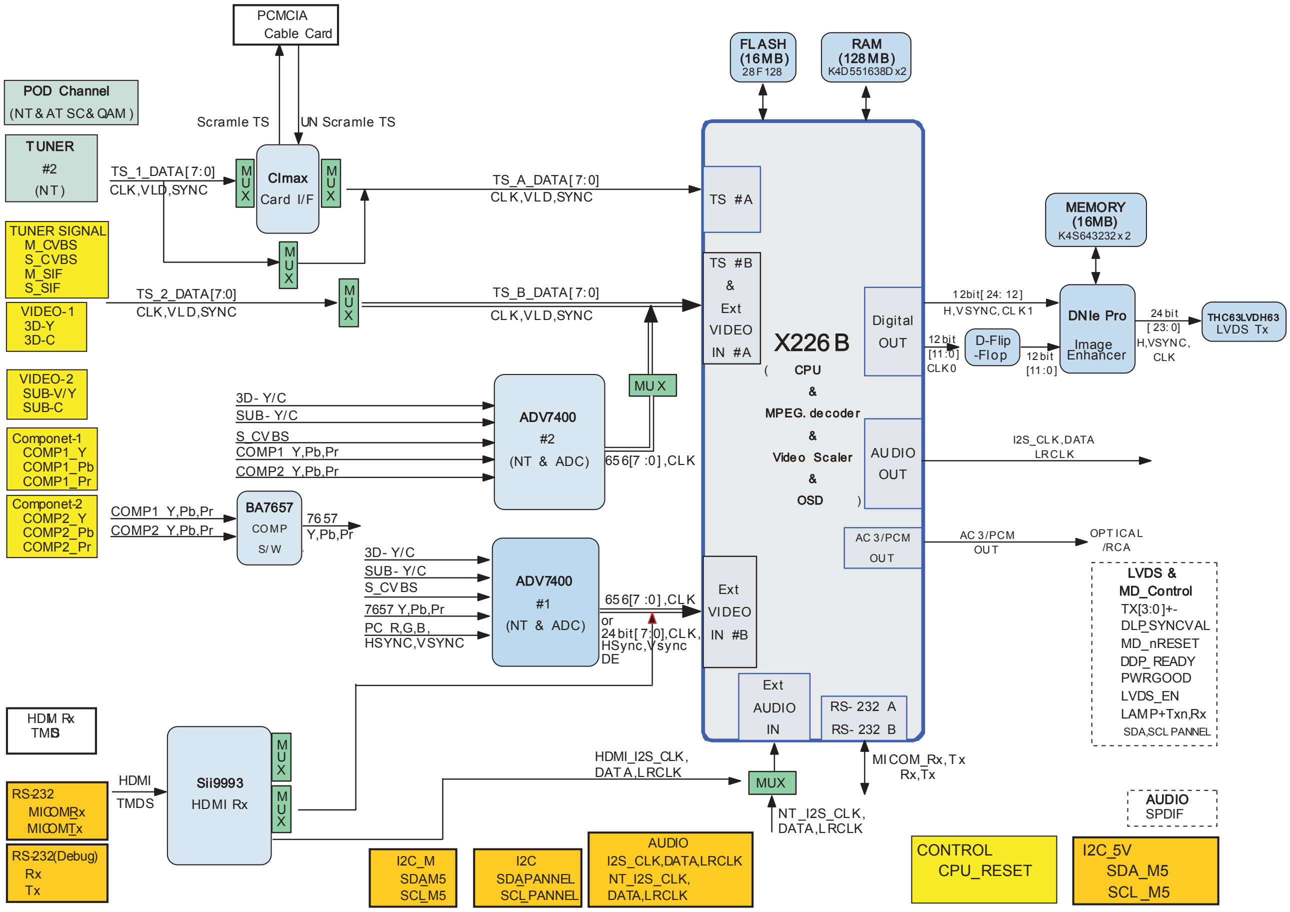
Loc.No.	Code No.	Description;Specification	Q'ty
T0952	AA59-00365A	MODULE-RF SPLITTER;UMX-NT-040,2in/2out/l	1
T0128	BN39-00518A	CBF SIGNAL-STEREO;NA32KO,1P,UL2464#26,20	1
M0125	BP39-00106C	CBF SIGNAL-DVI(D);HLP5063WX,24P/24P,2027	1
T0049	BP47-00021A	LAMP-BALLAST;EUC 120 P/H11,120W,130mm ca	1
T0074	BP59-00076A	REMOCON;ROBOCOP,TM76A,200*54*21,47,Light	1
T0015	BP64-00379B	CABINET BACK-BOT;50L3,HIPS,T3.5,V0,Gray,	1
M0045	BP64-00399A	CABINET BACK-TOP;61L3,HIPS,HB,GRAY	1
T0260	BP67-00098A	MIRROR;FRONT MIRROR 61",GLASS,34.85MM,13	1
T0053	BP67-00112A	SCREEN FRESNEL;61W,1381*790,1.5T	1
T0054	BP67-00156A	SCREEN LENTI;61W,MS,1381*790,2.1T	1
T0374	BP94-01719A	ASSY PCB MISC-POWER;HLP5067WS/XAA,L64A,B	1
T0145	BP94-02032A	ASSY PCB MISC-ANALOG;HLP5067WX/XAA,L64A,	1
T0245	BP94-02140E	ASSY PCB MISC-KEY CONTROL;HLP5663/6163W,	1
T0268	BP94-02140G	ASSY PCB MISC-RMC LED;HLP5063W,L62B,ATLA	1
T0091	BP94-02140H	ASSY PCB MISC-SIDE A/V;HLP5663/6163,L62B	1
T0268	BP94-02149E	ASSY PCB MISC-RMC LED;DP,BP41-00129A,L62	1
T0521	BP94-02149G	ASSY PCB MISC-THERMOSTAT;DP,AA41-00801D,	1
T0137	BP94-02149H	ASSY PCB MISC-DETECOTR S/W;DP,AA41-00756	1
T0753	BP94-02149K	ASSY PCB S-ACTUATOR;DP,BP41-00121A,L62B,	1
T0132	BP94-02200A	ASSY PCB MISC-DIGITAL;HLP5067WX/XAA,L64A	1
T0175	BP96-00542A	ASSY SPEAKER P;8ohm,3001-001282,25W,L3 W	2
CN269	BP96-00547B	ASSY BOARD P-JACK;ROBOCOP,NTSC,AV+S.VHS+	1
T0003	BP96-00586F	ASSY COVER P-FRONT;61L3,SEA(L64A),HIPS H	1
T0269	BP94-00485A	ASSY PCB S-ACTUATOR/SUB DETECT;HLP5063WX	1
T0260	BP67-00098A	MIRROR;FRONT MIRROR 61",GLASS,34.85MM,13	1

6. Block Diagram

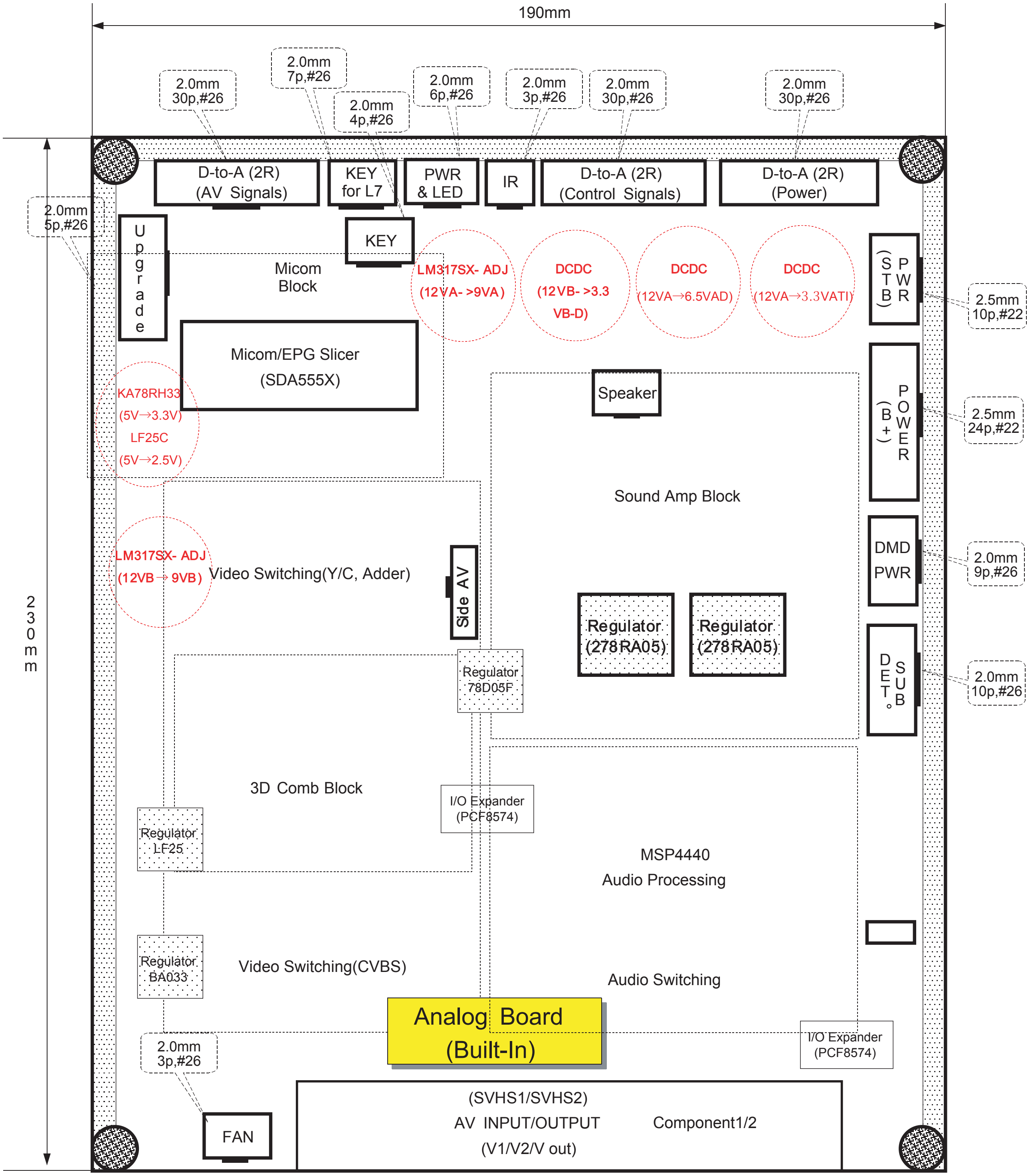
6-1 Digital Block Diagram


245mm
190mm
2R,32P,2mm,Blk
(AV Signals)
2R,30P,2mm,Blk
(Control Signals)
2R,30P,2mm
(Power)
Main Tuner (D)
POD CHANNEL
Sub Tuner
Analog Video
Processing
Block
I/O expander
Block
Digital Processing Block
(CPU,Scaler,DTV,DVI...)
Digital Board
(Built- In)
POD
Block
DV decoder
Block
POD slot
IEEE1394
Block
HDMI
Block
DNIe/LVDS Block
LVDS
OUTPUT
Split Tuner
HDMI
Anynet/
Debug
SPDIF
Optical

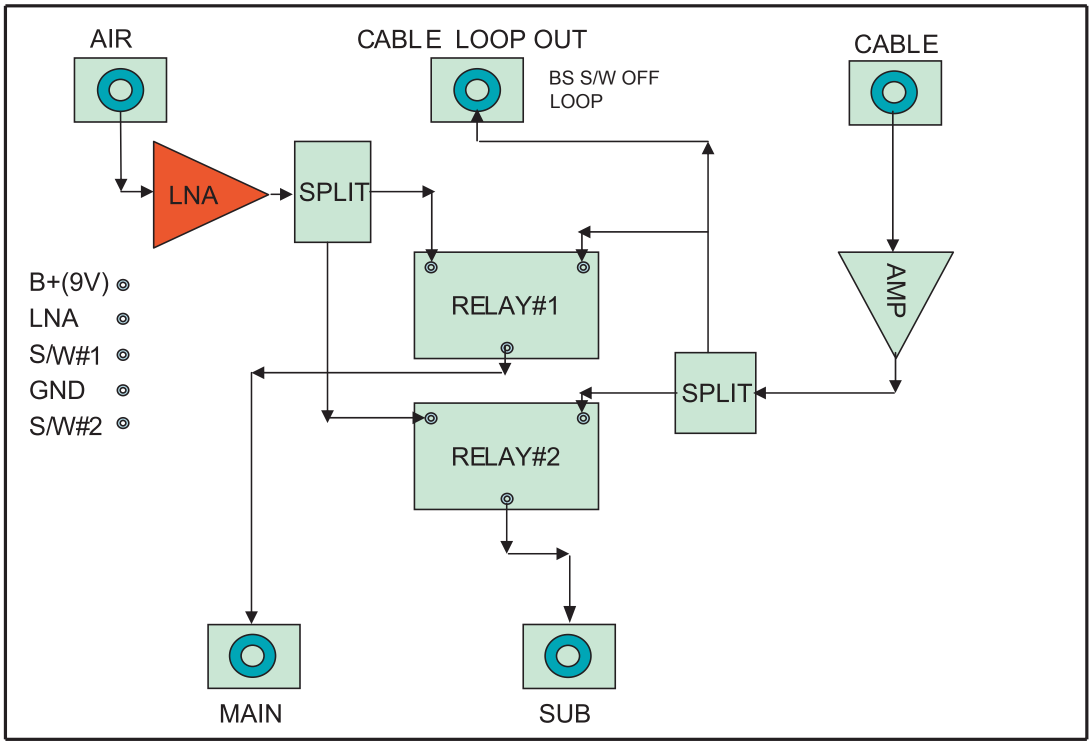
6-2 DLP-Builtin Module


PCMCIA Cable Card
POD Channel (NT & AT SC & QAM)
TUNER #2 (NT)
TUNER SIGNAL
M_CVBS
S_CVBS
M_SIF
S_SIF
VIDEO-1
3D-Y
3D-C
VIDEO-2
SUB-V/Y
SUB-C
Componet-1
COMP1_Y
COMP1_Pb
COMP1_Pr
Componet-2
COMP2_Y
COMP2_Pb
COMP2_Pr
Scramle TS
UN Scramle TS
TS_1_DATA[7:0]
CLK,VLD,SYNC
MUX
CImax Card I/F
TS_2_DATA[7:0]
CLK,VLD,SYNC
TS_A_DATA[7:0]
CLK,VLD,SYNC
TS_B_DATA[7:0]
CLK,VLD,SYNC
FLASH (16MB) 28F128
RAM (128MB) K4D551638D x2
TS #A
TS #B & Ext VIDEO IN #A
X226B
(CPU & MPEG. decoder & Video Scaler & OSD)
Digital OUT
AUDIO OUT
AC3/PCM OUT
Ext VIDEO IN #B
Ext AUDIO IN
RS-232 A
RS-232 B
MEMORY (16MB) K4S643232 x 2
12bit[24:12]
H,VSYNC,CLK1
12bit [11:0] CLK0
D-Flip -Flop
12bit [11:0]
DNIe Pro
Image Enhancer
24bit [23:0] H,VSYNC, CLK
THC63LVDH63 LVDS Tx
I2S_CLK,DATA
LRCLK
AC3/PCM OUT
OPTICAL /RCA
LVDS & MD_Control
TX[3:0]+-
DLP_SYNCVAL
MD_nRESET
DDP_READY
PWRGOOD
LVDS_EN
LAMP+Txn,Rx
SDA,SCL PANNEL
MUX
3D- Y/C
SUB- Y/C
S_CVBS
COMP1_Y,Pb,Pr
COMP2_Y,Pb,Pr
ADV7400 #2 (NT & ADC)
656[7:0],CLK
COMP1_Y,Pb,Pr
COMP2_Y,Pb,Pr
BA7657 COMP S/W
7657 Y,Pb,Pr
3D- Y/C
SUB- Y/C
S_CVBS
7657 Y,Pb,Pr
PC_R,G,B,
HSYNC,VSYNC
ADV7400 #1 (NT & ADC)
656[7:0],CLK
or
24bit[7:0],CLK,
HSync,Vsync
DE
HDMI Rx TMIS
RS-232
MICOM Rx
MICOM Tx
RS-232(Debug)
Rx
Tx
HDMI
TMDS
Sii9993 HDMI Rx
MUX
MUX
HDMI_I2S_CLK,
DATA,LRCLK
MUX
NT_I2S_CLK,
DATA,LRCLK
MICOM_Rx,Tx
Rx,Tx
AUDIO SPDIF
I2C_M
SDA_M5
SCL_M5
I2C
SDA_PANNEL
SCL_PANNEL
AUDIO
I2S_CLK,DATA,LRCLK
NT_I2S_CLK,
DATA,LRCLK
CONTROL
CPU_RESET
I2C_5V
SDA_M5
SCL_M5

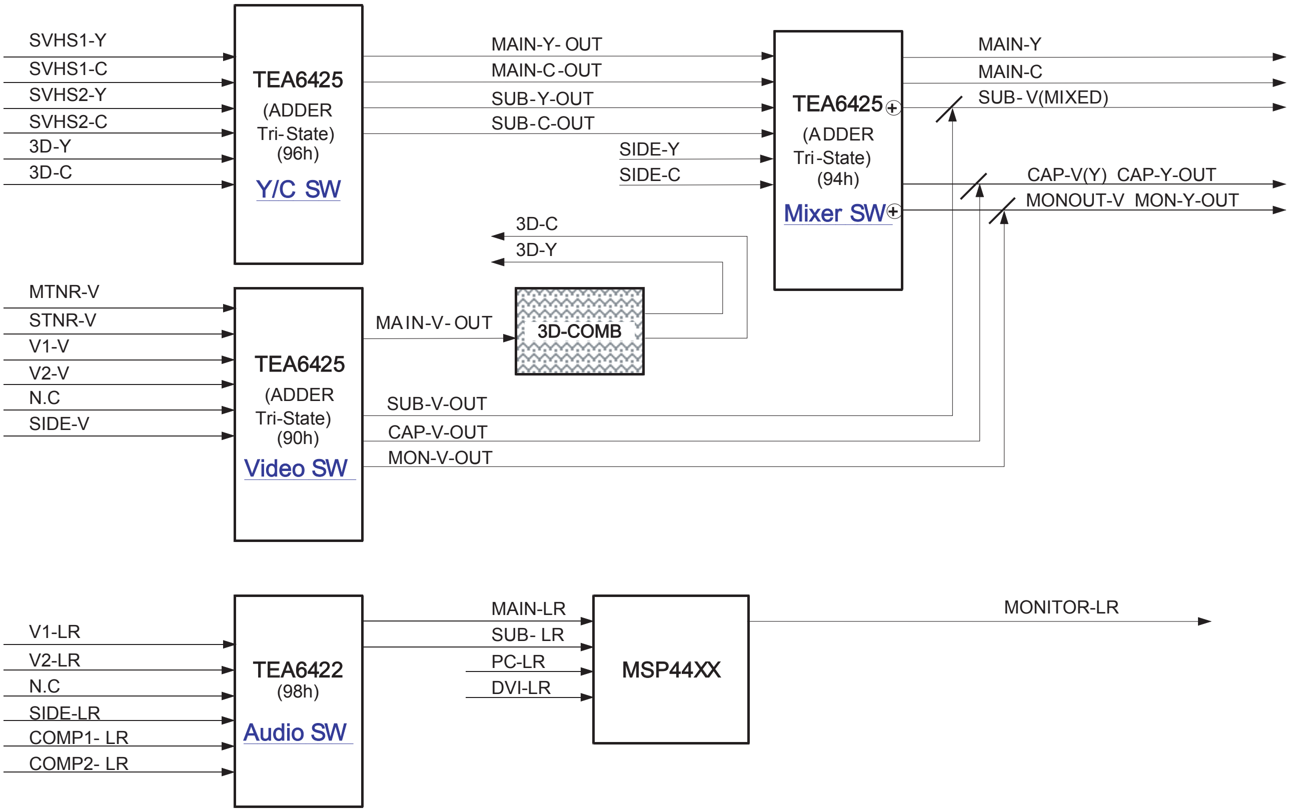
6-3 Analog Block Diagram


190mm
2.0mm 30p,#26
2.0mm 7p,#26
2.0mm 4p,#26
2.0mm 6p,#26
2.0mm 3p,#26
2.0mm 30p,#26
2.0mm 30p,#26
D-to-A (2R) (AV Signals)
KEY for L7
PWR & LED
IR
D-to-A (2R) (Control Signals)
D-to-A (2R) (Power)
2.0mm 5p,#26
Upgrade
KEY
Micom Block
LM317SX- ADJ (12VA- >9VA)
DCDC (12VB- >3.3 VB-D)
DCDC (12VA→6.5VAD)
DCDC (12VA→3.3VATI)
STB) PWR
2.5mm 10p,#22
Micom/EPG Slicer (SDA555X)
KA78RH33 (5V→3.3V) LF25C (5V→2.5V)
Speaker
(B+) POWER
2.5mm 24p,#22
230mm
Sound Amp Block
DMD PWR
2.0mm 9p,#26
LM317SX- ADJ (12VB→ 9VB)
Video Switching(Y/C, Adder)
Side AV
Regulator (278RA05)
Regulator (278RA05)
Regulator 78D05F
DET. SUB
2.0mm 10p,#26
3D Comb Block
I/O Expander (PCF8574)
Regulator LF25
MSP4440 Audio Processing
Regulator BA033
Video Switching(CVBS)
Audio Switching
Analog Board (Built-In)
I/O Expander (PCF8574)
2.0mm 3p,#26
FAN
(SVHS1/SVHS2) AV INPUT/OUTPUT (V1/V2/V out)
Component1/2

6-4 RF SWITCH POD LNA BLOCK


AIR
CABLE LOOP OUT
BS S/W OFF
LOOP
CABLE
LNA
SPLIT
RELAY#1
AMP
B+(9V)
LNA
S/W#1
GND
S/W#2
SPLIT
RELAY#2
MAIN
SUB

6-5 AV Switching(TEA64XX) BLOCK

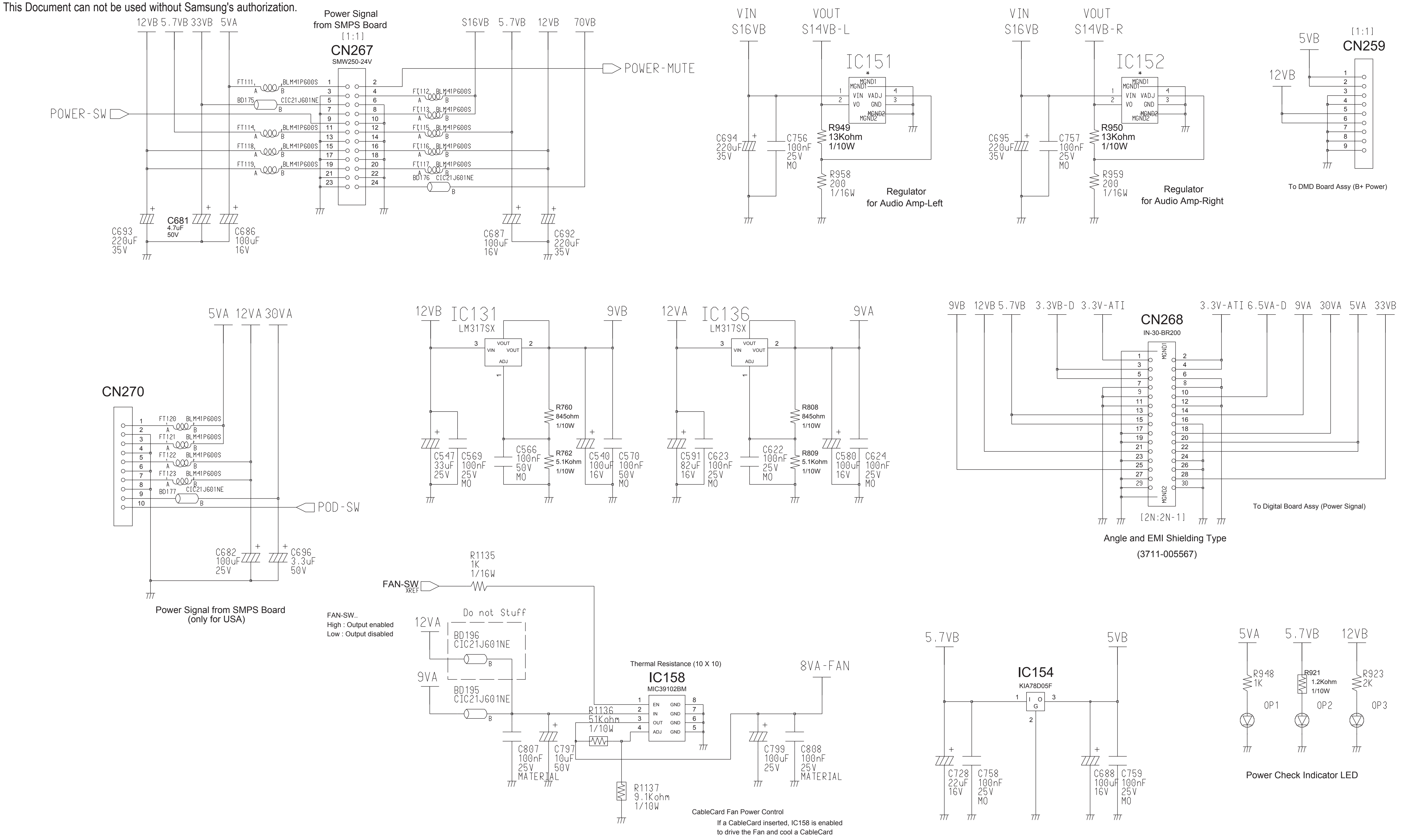

SVHS1-Y
SVHS1-C
SVHS2-Y
SVHS2-C
3D-Y
3D-C
TEA6425
(ADDER
Tri-State)
(96h)
Y/C SW
MAIN-Y- OUT
MAIN-C-OUT
SUB-Y-OUT
SUB-C-OUT
SIDE-Y
SIDE-C
TEA6425
(ADDER
Tri-State)
(94h)
Mixer SW
MAIN-Y
MAIN-C
SUB- V(MIXED)
CAP-V(Y) CAP-Y-OUT
MONOUT-V MON-Y-OUT
3D-C
3D-Y
MTNR-V
STNR-V
V1-V
V2-V
N.C
SIDE-V
TEA6425
(ADDER
Tri-State)
(90h)
Video SW
MAIN-V-OUT
3D-COMB
SUB-V-OUT
CAP-V-OUT
MON-V-OUT
V1-LR
V2-LR
N.C
SIDE-LR
COMP1- LR
COMP2- LR
TEA6422
(98h)
Audio SW
MAIN-LR
SUB- LR
PC-LR
DVI-LR
MSP44XX
MONITOR-LR

7. Schematic Diagrams

7-1 Analog

7-1-1 PowerSignal

This Document can not be used without Samsung's authorization.


Power Signal
from SMPS Board
[1:1]
CN267
SMW250-24V
12VB
5.7VB
33VB
5VA
S16VB
70VB
POWER-SW
POWER-MUTE
FT111 BLM41P600S
BD175 CIC21J601NE
FT114 BLM41P600S
FT118 BLM41P600S
FT119 BLM41P600S
FT112 BLM41P600S
FT113 BLM41P600S
FT115 BLM41P600S
FT116 BLM41P600S
FT117 BLM41P600S
BD176 CIC21J601NE
C693 220uF 35V
C681 4.7uF 50V
C686 100uF 16V
C687 100uF 16V
C692 220uF 35V
VIN S16VB
VOUT S14VB-L
IC151
MGND1
VIN VADJ
VO GND
MGND2
C694 220uF 35V
C756 100nF 25V MO
R949 13Kohm 1/10W
R958 200 1/16W
VOUT S14VB-R
IC152
C695 220uF 35V
C757 100nF 25V MO
R950 13Kohm 1/10W
R959 200 1/16W
5VB
[1:1]
CN259
CN270
FT120 BLM41P600S
FT121 BLM41P600S
FT122 BLM41P600S
FT123 BLM41P600S
BD177 CIC21J601NE
POD-SW
12VA
30VA
C682 100uF 25V
C696 3.3uF 50V
IC131
LM317SX
9VB
VOUT
VIN
ADJ
R760 845ohm 1/10W
R762 5.1Kohm 1/10W
C547 33uF 25V
C569 100nF 25V MO
C566 100nF 50V MO
C540 100uF 16V
C570 100nF 50V MO
IC136
LM317SX
9VA
R808 845ohm 1/10W
R809 5.1Kohm 1/10W
C591 82uF 16V
C623 100nF 25V MO
C622 100nF 25V MO
C580 100uF 16V
C624 100nF 25V MO
3.3VB-D
3.3V-ATI
6.5VA-D
CN268
IN-30-BR200
MGND1
MGND2
[2N:2N-1]
FAN-SW
XREF
R1135 1K 1/16W
Do not Stuff
BD196 CIC21J601NE
BD195 CIC21J601NE
R1136 51Kohm 1/10W
IC158
MIC39102BM
EN GND
IN GND
OUT GND
ADJ GND
8VA-FAN
C807 100nF 25V MATERIAL
C797 10uF 50V
R1137 9.1Kohm 1/10W
C799 100uF 25V
C808 100nF 25V MATERIAL
IC154
KIA78D05F
I O G
C728 22uF 16V
C758 100nF 25V MO
C688 100uF 16V
C759 100nF 25V MO
R948 1K
R921 1.2Kohm 1/10W
R923 2K
OP1
OP2
OP3

Regulator
for Audio Amp-Left

Regulator
for Audio Amp-Right

To DMD Board Assy (B+ Power)

To Digital Board Assy (Power Signal)

Angle and EMI Shielding Type

(3711-005567)

Power Signal from SMPS Board
(only for USA)

FAN-SW..
High : Output enabled
Low : Output disabled

Thermal Resistance (10 X 10)

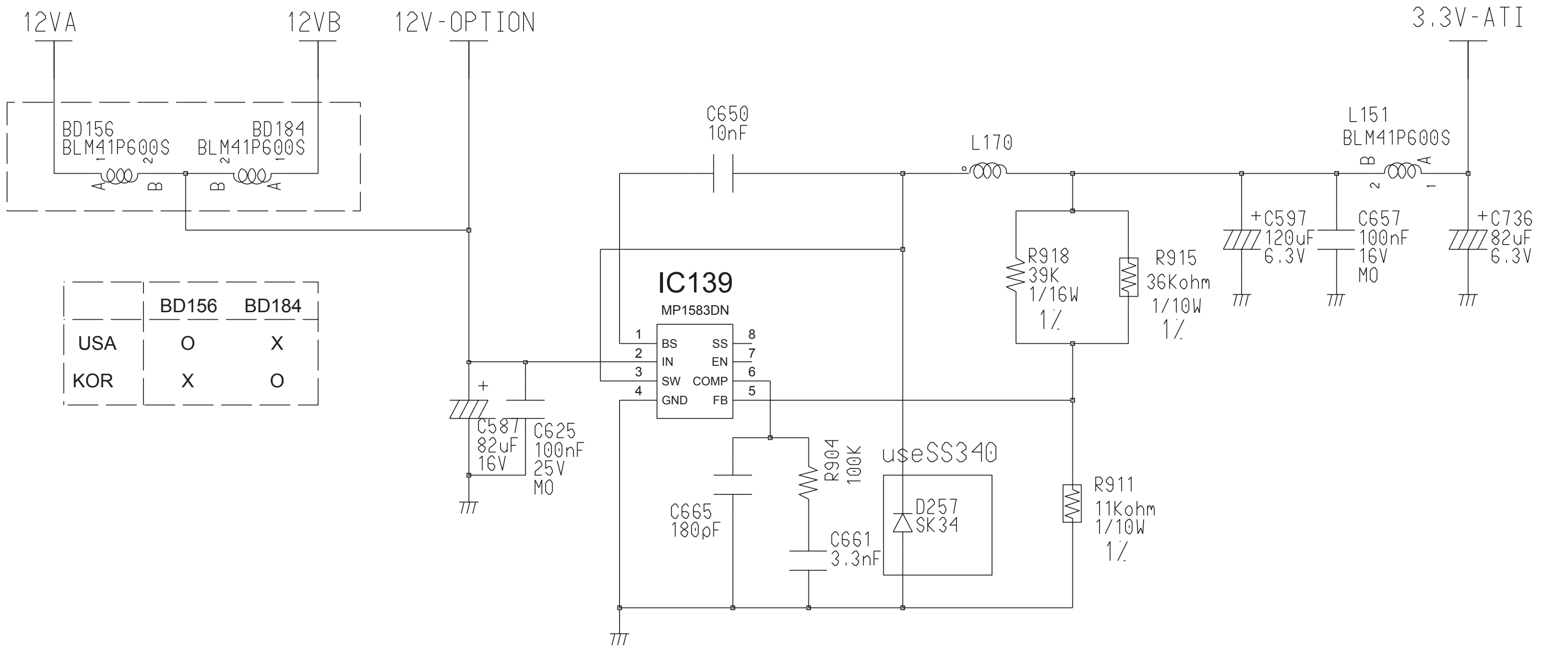
CableCard Fan Power Control

If a CableCard inserted, IC158 is enabled
to drive the Fan and cool a CableCard

Power Check Indicator LED

7-1-2 DCDC

This Document can not be used without Samsung's authorization.

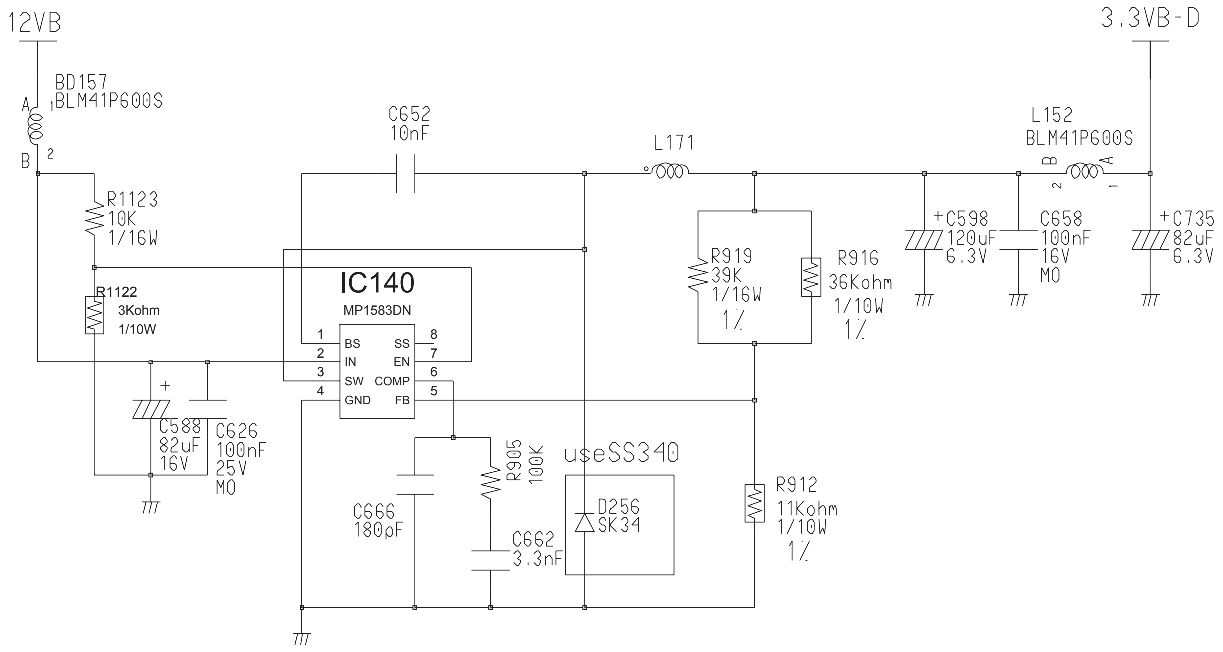

12VA
12VB
12V-OPTION
3.3V-ATI
BD156
BLM41P600S
BD184
BLM41P600S
C650
10nF
L170
L151
BLM41P600S
C597
120uF
6.3V
C657
100nF
16V
MO
C736
82uF
6.3V
R918
39K
1/16W
1%
R915
36Kohm
1/10W
1%
IC139
MP1583DN
BS
IN
SW
GND
SS
EN
COMP
FB
C587
82uF
16V
C625
100nF
25V
MO
R904
100K
useSS340
C665
180pF
C661
3.3nF
D257
SK34
R911
11Kohm
1/10W
1%

	BD156	BD184
USA	O	X
KOR	X	O

DCDC Converter for Power of ATI-CPU

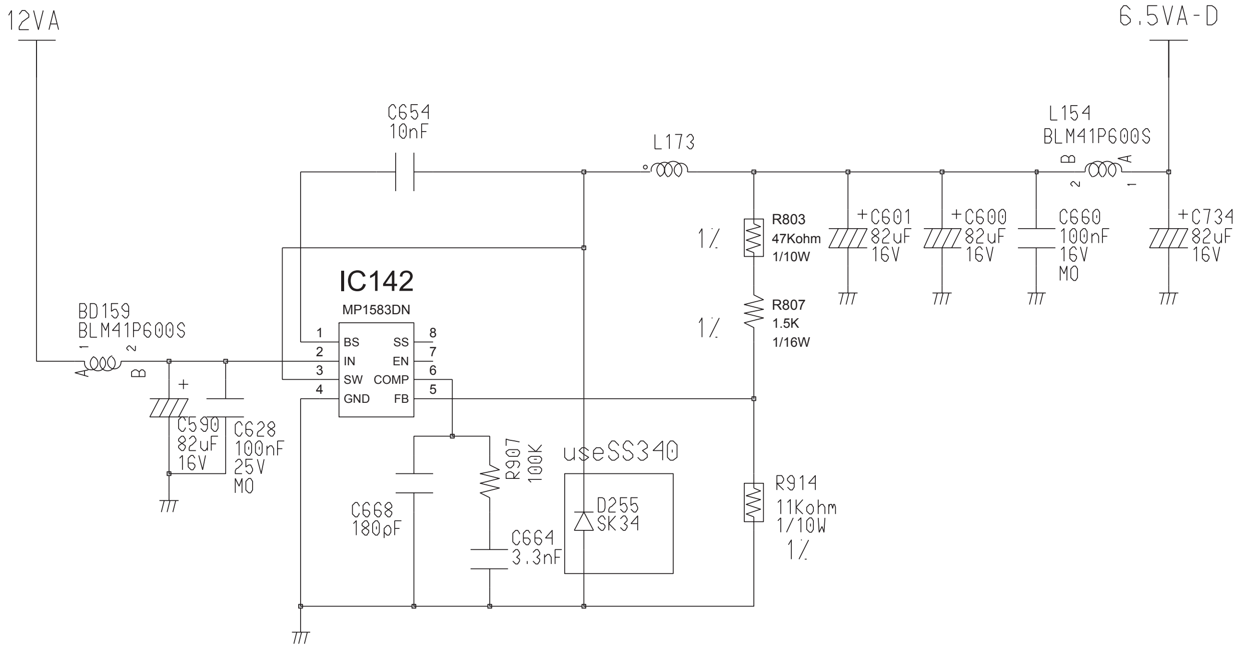
USA : STD power

KOR : B+ power


12VB
3.3VB-D
BD157
BLM41P600S
R1123
10K
1/16W
R1122
3Kohm
1/10W
C652
10nF
L171
L152
BLM41P600S
C598
120uF
6.3V
C658
100nF
16V
MO
C735
82uF
6.3V
R919
39K
1/16W
1%
R916
36Kohm
1/10W
1%
IC140
MP1583DN
BS
IN
SW
GND
SS
EN
COMP
FB
C588
82uF
16V
C626
100nF
25V
MO
R905
100K
useSS340
C666
180pF
C662
3.3nF
D256
SK34
R912
11Kohm
1/10W
1%

DCDC Converter for Power of ATI-CPU

USA/KOR Common B+ power

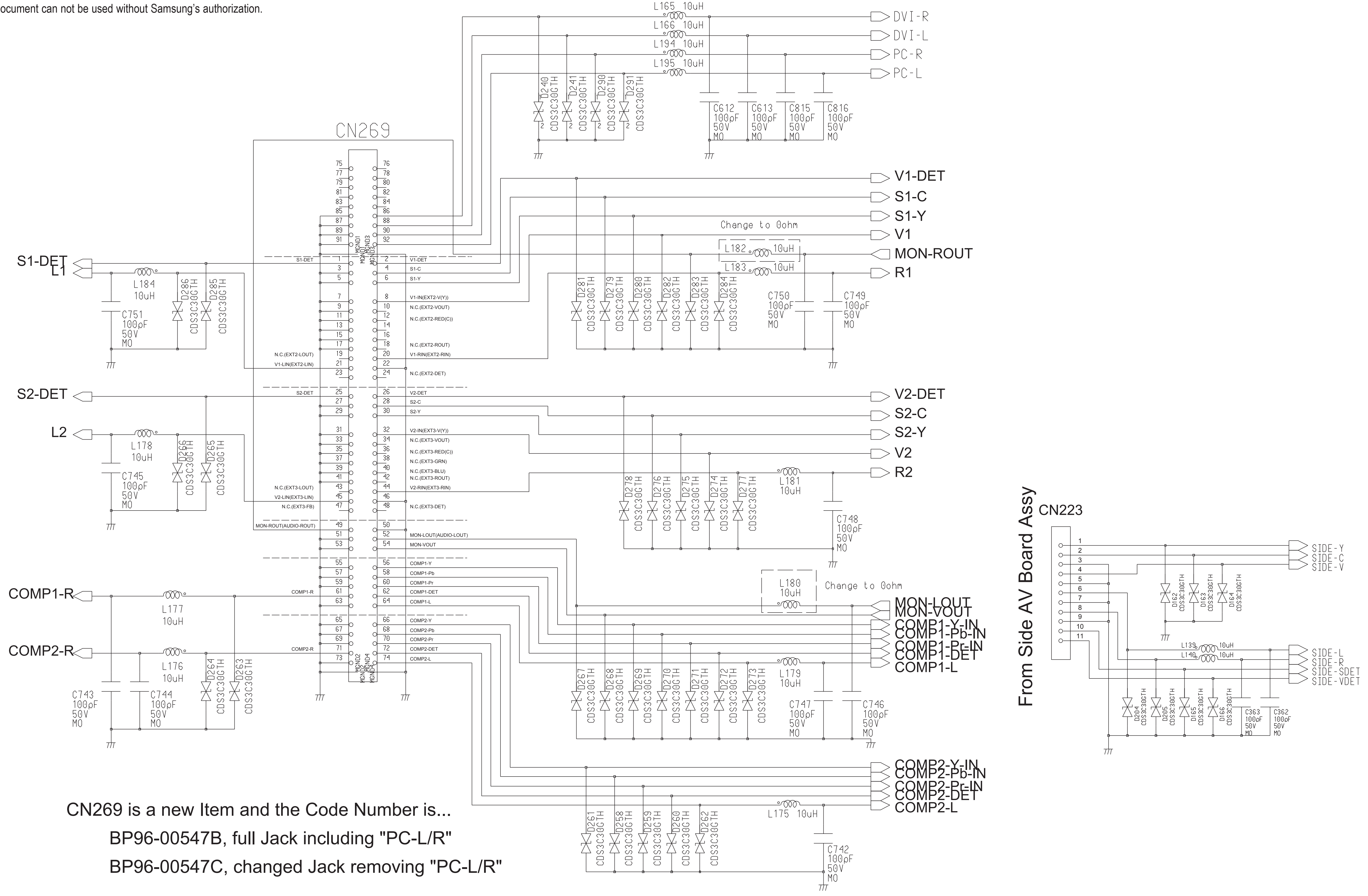

12VA
6.5VA-D
C654
10nF
L173
L154
BLM41P600S
R803
47Kohm
1/10W
1%
R807
1.5K
1/16W
1%
C601
82uF
16V
C600
82uF
16V
C660
100nF
16V
MO
C734
82uF
16V
IC142
MP1583DN
BS
IN
SW
GND
SS
EN
COMP
FB
BD159
BLM41P600S
C590
82uF
16V
C628
100nF
25V
MO
R907
100K
useSS340
C668
180pF
C664
3.3nF
D255
SK34
R914
11Kohm
1/10W
1%

DCDC Converter for Power of Channel Board

Only for USA

7-1-3 AV_Input

This Document can not be used without Samsung's authorization.


CN269
L165 10uH
L166 10uH
L194 10uH
L195 10uH
DVI-R
DVI-L
PC-R
PC-L
D240 CDS3C30GTH
D241 CDS3C30GTH
D290 CDS3C30GTH
D291 CDS3C30GTH
C612 100pF 50V MO
C613 100pF 50V MO
C815 100pF 50V MO
C816 100pF 50V MO
V1-DET
S1-C
S1-Y
V1
MON-ROUT
R1
Change to 0ohm
L182 10uH
L183 10uH
D281 D279 D280 D282 D283 D284 CDS3C30GTH
C750 100pF 50V MO
C749 100pF 50V MO
S1-DET
L1
L184 10uH
D286 CDS3C30GTH
D285 CDS3C30GTH
C751 100pF 50V MO
S2-DET
L2
L178 10uH
D266 CDS3C30GTH
D265 CDS3C30GTH
C745 100pF 50V MO
V2-DET
S2-C
S2-Y
V2
R2
D278 D276 D275 D274 D277 CDS3C30GTH
L181 10uH
C748 100pF 50V MO
COMP1-R
L177 10uH
COMP2-R
L176 10uH
D264 CDS3C30GTH
D263 CDS3C30GTH
C743 100pF 50V MO
C744 100pF 50V MO
L180 10uH
Change to 0ohm
MON-LOUT
MON-VOUT
COMP1-Y-IN
COMP1-Pb-IN
COMP1-Pr-IN
COMP1-DET
COMP1-L
D267 D268 D269 D270 D271 D272 D273 CDS3C30GTH
L179 10uH
C747 100pF 50V MO
C746 100pF 50V MO
COMP2-Y-IN
COMP2-Pb-IN
COMP2-Pr-IN
COMP2-DET
COMP2-L
D261 D258 D259 D260 D262 CDS3C30GTH
L175 10uH
C742 100pF 50V MO
S1-DET
V1-DET
S1-C
S1-Y
V1-IN(EXT2-V(Y))
N.C.(EXT2-VOUT)
N.C.(EXT2-RED(C))
N.C.(EXT2-ROUT)
V1-RIN(EXT2-RIN)
N.C.(EXT2-LOUT)
V1-LIN(EXT2-LIN)
N.C.(EXT2-DET)
S2-DET
V2-DET
S2-C
S2-Y
V2-IN(EXT3-V(Y))
N.C.(EXT3-VOUT)
N.C.(EXT3-RED(C))
N.C.(EXT3-GRN)
N.C.(EXT3-BLU)
N.C.(EXT3-ROUT)
V2-RIN(EXT3-RIN)
N.C.(EXT3-LOUT)
V2-LIN(EXT3-LIN)
N.C.(EXT3-FB)
N.C.(EXT3-DET)
MON-ROUT(AUDIO-ROUT)
MON-LOUT(AUDIO-LOUT)
MON-VOUT
COMP1-Y
COMP1-Pb
COMP1-Pr
COMP1-R
COMP1-DET
COMP1-L
COMP2-Y
COMP2-Pb
COMP2-Pr
COMP2-R
COMP2-DET
COMP2-L
From Side AV Board Assy
CN223
SIDE-Y
SIDE-C
SIDE-V
D162 D163 D164 CDS3C30GTH
L139 10uH
L140 10uH
SIDE-L
SIDE-R
SIDE-SDET
SIDE-VDET
D204 D205 D165 D166 CDS3C30GTH
C363 100pF 50V MO
C362 100pF 50V MO

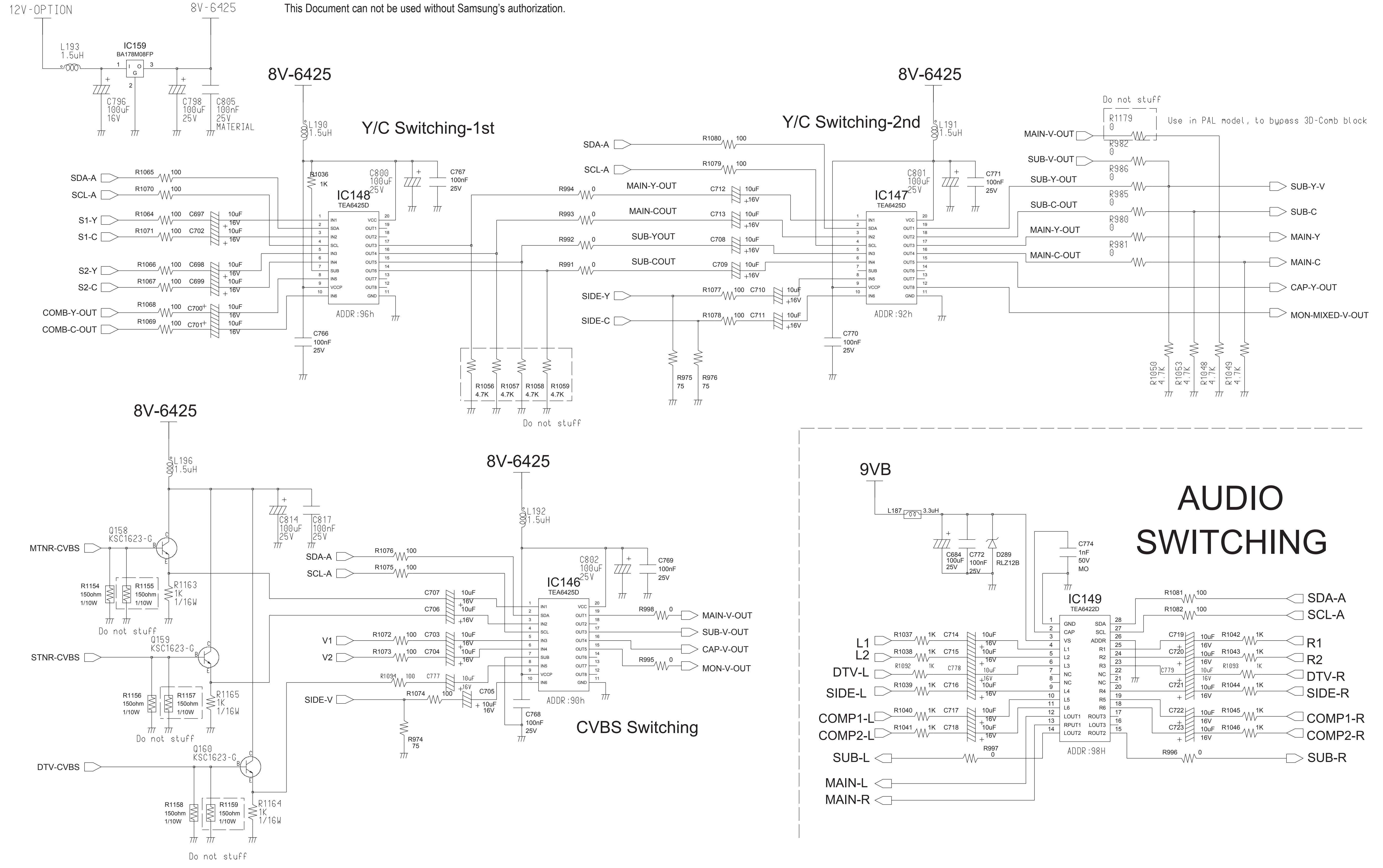
CN269 is a new Item and the Code Number is...

BP96-00547B, full Jack including "PC-L/R"

BP96-00547C, changed Jack removing "PC-L/R"

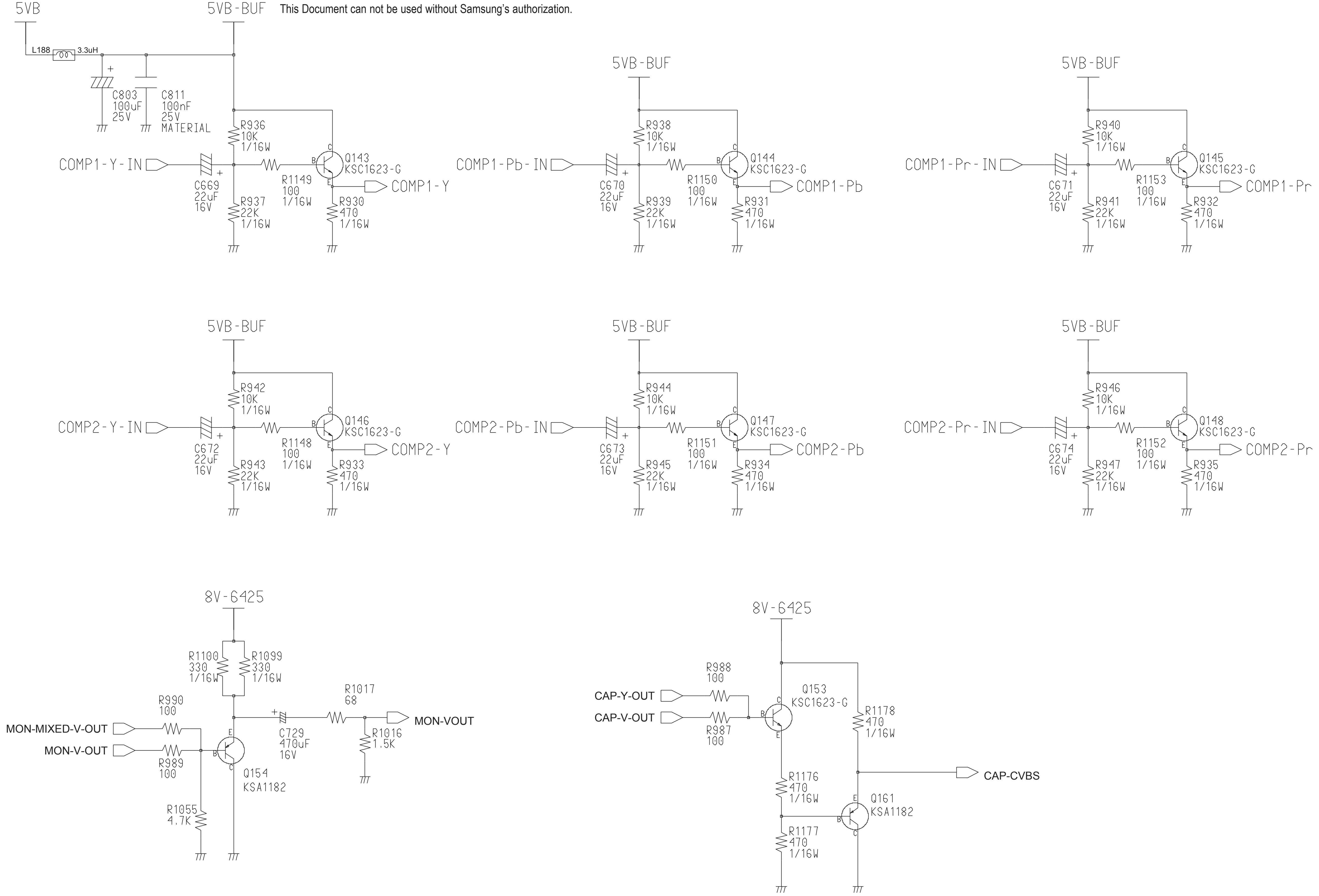
7-1-4 AV_Switching

This Document can not be used without Samsung's authorization.


12V-OPTION
8V-6425
L193 1.5uH
IC159 BA178M08FP
C796 100uF 16V
C798 100uF 25V
C805 100nF 25V MATERIAL
Y/C Switching-1st
L190 1.5uH
IC148 TEA6425D
C800 100uF 25V
C767 100nF 25V
R1036 1K
SDA-A
SCL-A
S1-Y
S1-C
S2-Y
S2-C
COMB-Y-OUT
COMB-C-OUT
C766 100nF 25V
ADDR:96h
MAIN-Y-OUT
MAIN-COUT
SUB-YOUT
SUB-COUT
R994 0
R993 0
R992 0
R991 0
R1056 4.7K
R1057 4.7K
R1058 4.7K
R1059 4.7K
Do not stuff
SIDE-Y
SIDE-C
R975 75
R976 75
Y/C Switching-2nd
L191 1.5uH
IC147 TEA6425D
C801 100uF 25V
C771 100nF 25V
C770 100nF 25V
ADDR:92h
MAIN-V-OUT
SUB-V-OUT
SUB-Y-OUT
SUB-C-OUT
MAIN-Y-OUT
MAIN-C-OUT
R1179 0
Use in PAL model, to bypass 3D-Comb block
R982 0
R986 0
R985 0
R980 0
R981 0
SUB-Y-V
SUB-C
MAIN-Y
MAIN-C
CAP-Y-OUT
MON-MIXED-V-OUT
R1050 4.7K
R1053 4.7K
R1048 4.7K
R1049 4.7K
L196 1.5uH
Q158 KSC1623-G
MTNR-CVBS
R1154 150ohm 1/10W
R1155 150ohm 1/10W
R1163 1K 1/16W
Q159 KSC1623-G
STNR-CVBS
R1156 150ohm 1/10W
R1157 150ohm 1/10W
R1165 1K 1/16W
Q160 KSC1623-G
DTV-CVBS
R1158 150ohm 1/10W
R1159 150ohm 1/10W
R1164 1K 1/16W
C814 100uF 25V
C817 100nF 25V
L192 1.5uH
IC146 TEA6425D
C802 100uF 25V
C769 100nF 25V
C768 100nF 25V
ADDR:90h
V1
V2
SIDE-V
R974 75
MAIN-V-OUT
SUB-V-OUT
CAP-V-OUT
MON-V-OUT
CVBS Switching
9VB
L187 3.3uH
C684 100uF 25V
C772 100nF 25V
D289 RLZ12B
C774 1nF 50V MO
AUDIO SWITCHING
IC149 TEA6422D
ADDR:98H
L1
L2
DTV-L
SIDE-L
COMP1-L
COMP2-L
SUB-L
MAIN-L
MAIN-R
SDA-A
SCL-A
R1
R2
DTV-R
SIDE-R
COMP1-R
COMP2-R
SUB-R
R997 0
R996 0

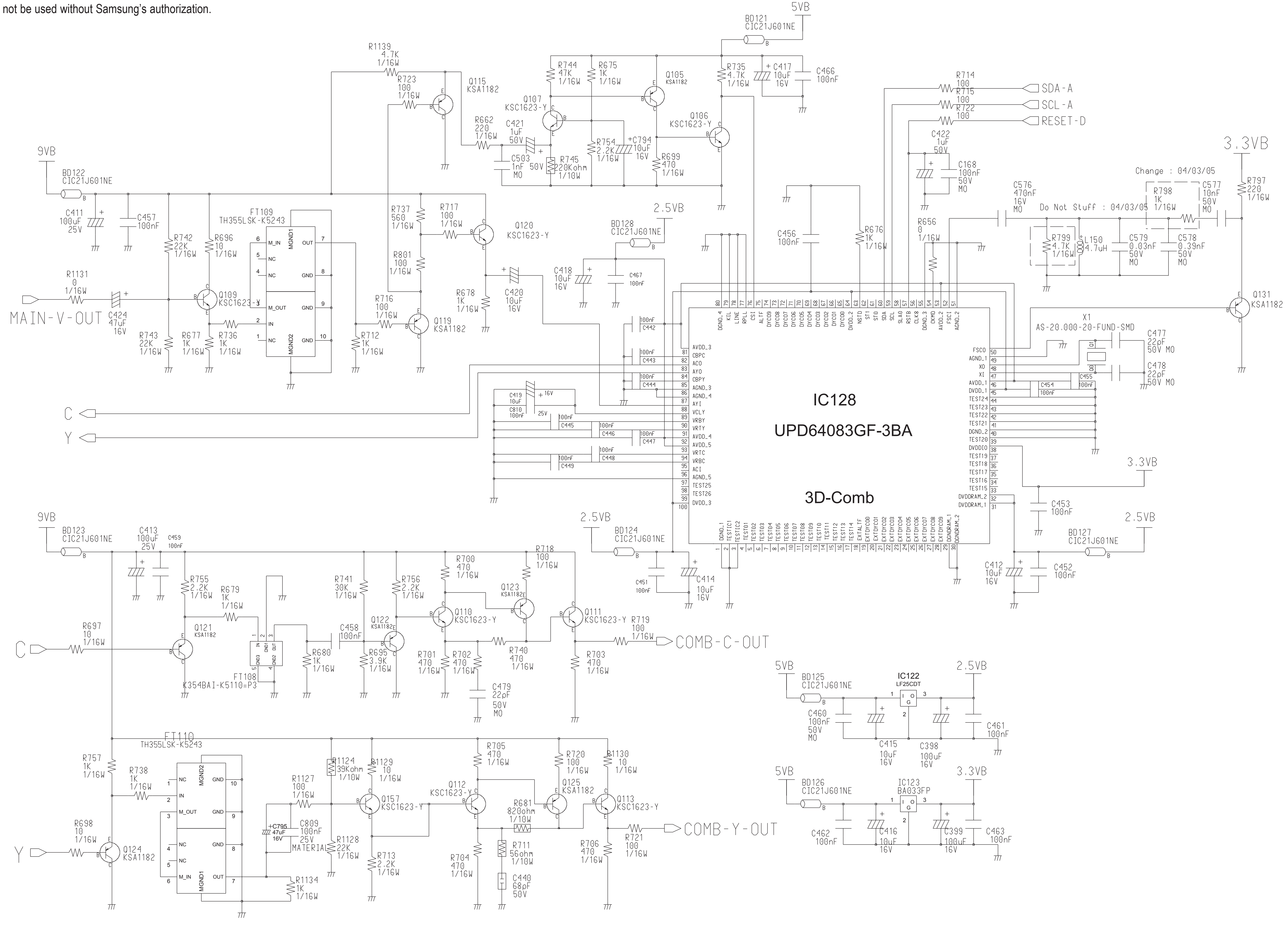
7-1-5 AV_Comp_Buffer

This Document can not be used without Samsung's authorization.


5VB
5VB-BUF
L188
3.3uH
C803
100uF
25V
C811
100nF
25V
MATERIAL
R936
10K
1/16W
COMP1-Y-IN
C669
22uF
16V
R1149
100
1/16W
Q143
KSC1623-G
COMP1-Y
R937
22K
1/16W
R930
470
1/16W
5VB-BUF
R938
10K
1/16W
COMP1-Pb-IN
C670
22uF
16V
R1150
100
1/16W
Q144
KSC1623-G
COMP1-Pb
R939
22K
1/16W
R931
470
1/16W
5VB-BUF
R940
10K
1/16W
COMP1-Pr-IN
C671
22uF
16V
R1153
100
1/16W
Q145
KSC1623-G
COMP1-Pr
R941
22K
1/16W
R932
470
1/16W
5VB-BUF
R942
10K
1/16W
COMP2-Y-IN
C672
22uF
16V
R1148
100
1/16W
Q146
KSC1623-G
COMP2-Y
R943
22K
1/16W
R933
470
1/16W
5VB-BUF
R944
10K
1/16W
COMP2-Pb-IN
C673
22uF
16V
R1151
100
1/16W
Q147
KSC1623-G
COMP2-Pb
R945
22K
1/16W
R934
470
1/16W
5VB-BUF
R946
10K
1/16W
COMP2-Pr-IN
C674
22uF
16V
R1152
100
1/16W
Q148
KSC1623-G
COMP2-Pr
R947
22K
1/16W
R935
470
1/16W
8V-6425
R1100
330
1/16W
R1099
330
1/16W
R1017
68
R990
100
MON-MIXED-V-OUT
MON-V-OUT
R989
100
C729
470uF
16V
MON-VOUT
R1016
1.5K
Q154
KSA1182
R1055
4.7K
8V-6425
R988
100
CAP-Y-OUT
CAP-V-OUT
R987
100
Q153
KSC1623-G
R1178
470
1/16W
CAP-CVBS
R1176
470
1/16W
Q161
KSA1182
R1177
470
1/16W

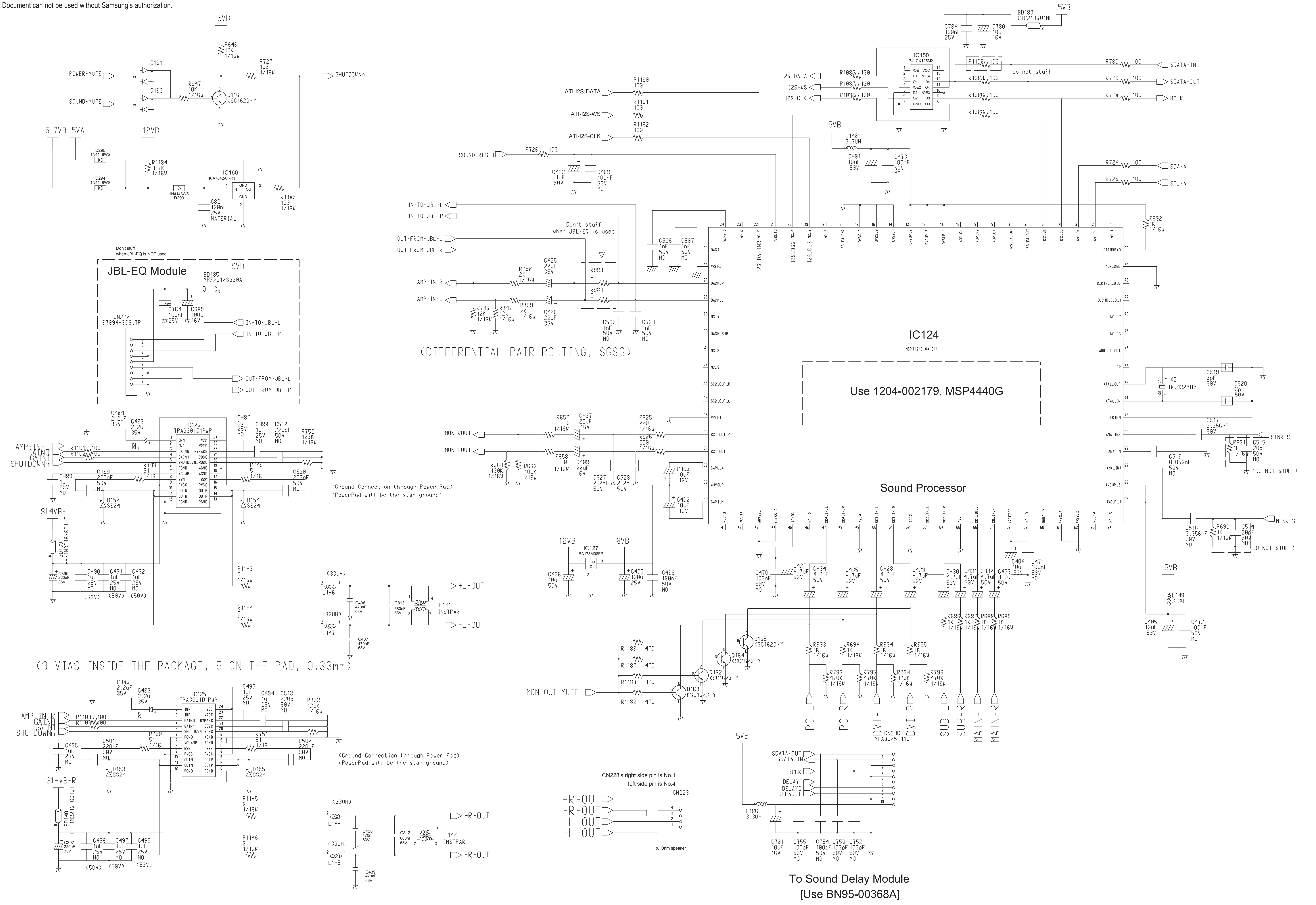
7-1-6 3D_Comb

This Document can not be used without Samsung's authorization.


5VB
BD121 CIC21J601NE
R1139 4.7K 1/16W
R723 100 1/16W
Q115 KSA1182
R744 47K 1/16W
R675 1K 1/16W
Q105 KSA1182
R735 4.7K 1/16W
C417 10uF 16V
C466 100nF
R714 100
SDA-A
R715 100
SCL-A
R722 100
RESET-D
Q107 KSC1623-Y
Q106 KSC1623-Y
R662 220 1/16W
C421 1uF 50V
C503 1nF 50V MO
R745 220Kohm 1/10W
R754 2.2K 1/16W
C794 10uF 16V
R699 470 1/16W
C422 1uF 50V
C168 100nF 50V MO
3.3VB
Change : 04/03/05
R797 220 1/16W
9VB
BD122 CIC21J601NE
C411 100uF 25V
C457 100nF
R742 22K 1/16W
R696 10 1/16W
FT109 TH355LSK-K5243
M_IN
NC
OUT
GND
MGND1
M_OUT
IN
MGND2
R737 560 1/16W
R717 100 1/16W
Q120 KSC1623-Y
2.5VB
BD128 CIC21J601NE
C456 100nF
R676 1K 1/16W
R656 0 1/16W
C576 470nF 16V MO
Do Not Stuff : 04/03/05
R798 1K 1/16W
C577 10nF 50V MO
R799 4.7K 1/16W
L150 4.7uH
C579 0.03nF 50V MO
C578 0.39nF 50V MO
R1131 0 1/16W
MAIN-V-OUT
C424 47uF 16V
Q109 KSC1623-Y
R801 100 1/16W
C418 10uF 16V
C467 100nF
R716 100 1/16W
Q119 KSA1182
R678 1K 1/16W
C420 10uF 16V
Q131 KSA1182
R743 22K 1/16W
R677 1K 1/16W
R736 1K 1/16W
R712 1K 1/16W
X1 AS-20.000-20-FUND-SMD
C477 22pF 50V MO
C478 22pF 50V MO
C442 C443 C444 C445 C446 C447 C448 C449
C419 10uF 16V
C810 100nF 25V
C454 C455
C
Y
IC128
UPD64083GF-3BA
3D-Comb
3.3VB
C453 100nF
9VB
BD123 CIC21J601NE
C413 100uF 25V
C459 100nF
2.5VB
BD124 CIC21J601NE
2.5VB
BD127 CIC21J601NE
R718 100 1/16W
R700 470 1/16W
R741 30K 1/16W
R756 2.2K 1/16W
R755 2.2K 1/16W
R679 1K 1/16W
Q123 KSA1182
Q110 KSC1623-Y
Q111 KSC1623-Y
C451 100nF
C414 10uF 16V
C412 10uF 16V
C452 100nF
R697 10 1/16W
Q121 KSA1182
C458 100nF
Q122 KSA1182
R719 100 1/16W
COMB-C-OUT
FT108 K354BAI-K5110=P3
R680 1K 1/16W
R695 3.9K 1/16W
R701 470 1/16W
R702 470 1/16W
R740 470 1/16W
R703 470 1/16W
C479 22pF 50V MO
5VB
BD125 CIC21J601NE
IC122 LF25CDT
2.5VB
C460 100nF 50V MO
C415 10uF 16V
C398 100uF 16V
C461 100nF
FT110 TH355LSK-K5243
R757 1K 1/16W
R738 1K 1/16W
R1124 39Kohm 1/10W
R1129 10 1/16W
R705 470 1/16W
R720 100 1/16W
R1130 10 1/16W
R1127 100 1/16W
Q157 KSC1623-Y
Q112 KSC1623-Y
R681 820ohm 1/10W
Q125 KSA1182
Q113 KSC1623-Y
5VB
BD126 CIC21J601NE
IC123 BA033FP
3.3VB
C795 47uF 16V
C809 100nF 25V MATERIAL
R1128 22K 1/16W
R711 56ohm 1/10W
R706 470 1/16W
R721 100 1/16W
COMB-Y-OUT
C462 100nF
C416 10uF 16V
C399 100uF 16V
C463 100nF
R698 10 1/16W
Y
Q124 KSA1182
R713 2.2K 1/16W
R704 470 1/16W
C440 68pF 50V
R1134 1K 1/16W

7-1-7 Sound_Processor & Amp

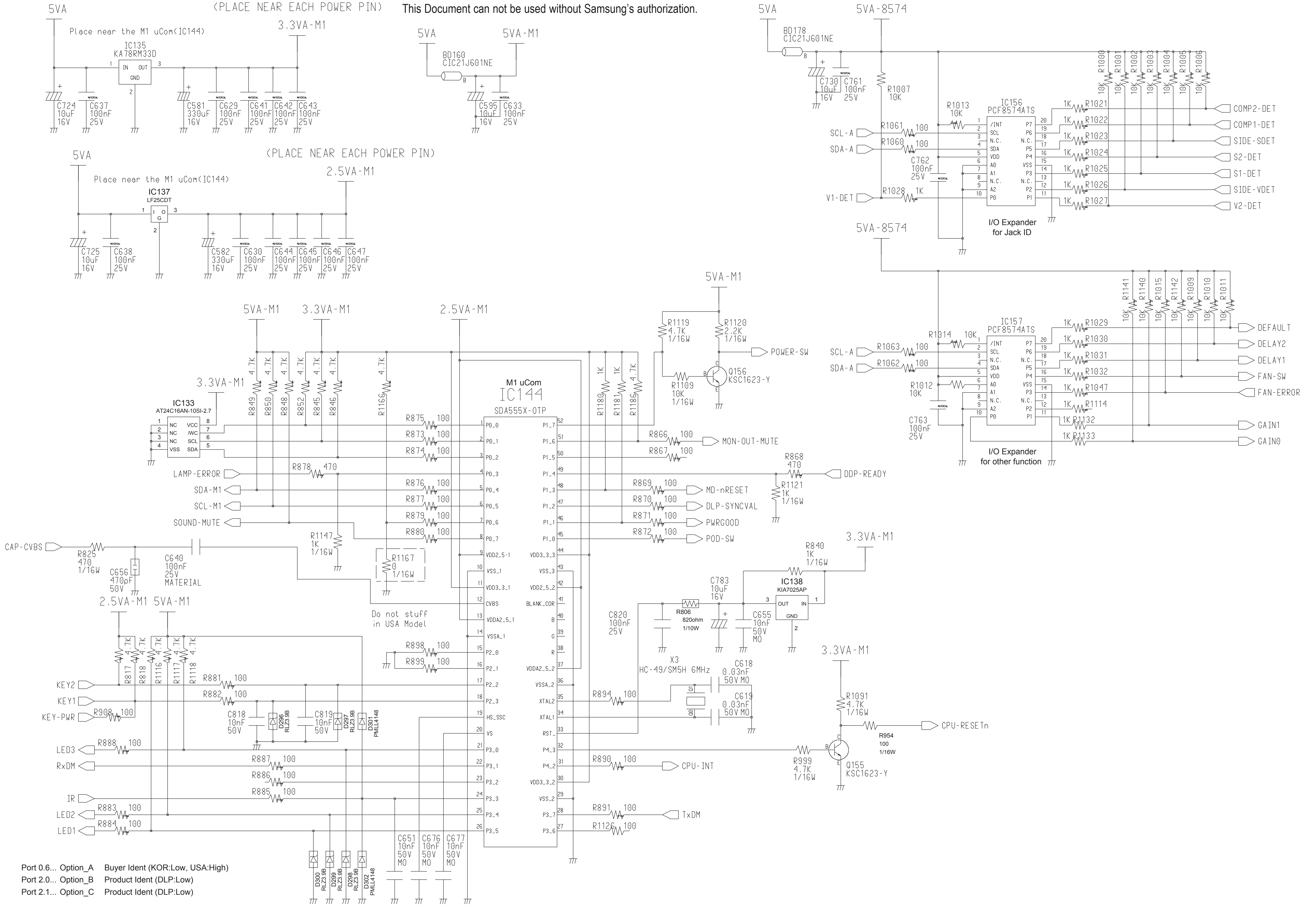
This Document can not be used without Samsung's authorization.



5VB
POWER-MUTE
SOUND-MUTE
SHUTDOWNn
Q116 KSC1623-Y
5.7VB 5VA 12VB
IC160 KIA7042AF-RTF
Don't stuff when JBL-EQ is NOT used
JBL-EQ Module
CN272 6T094-009,TP
IN-TO-JBL-L
IN-TO-JBL-R
OUT-FROM-JBL-L
OUT-FROM-JBL-R
ATI-I2S-DATA
ATI-I2S-WS
ATI-I2S-CLK
SOUND-RESET
AMP-IN-R
AMP-IN-L
Don't stuff when JBL-EQ is used
(DIFFERENTIAL PAIR ROUTING, SGSG)
IC150 74LCX125MX
do not stuff
SDATA-IN
SDATA-OUT
BCLK
SDA-A
SCL-A
I2S-DATA
I2S-WS
I2S-CLK
IC124
MSP3421G-QA-B11
Use 1204-002179, MSP4440G
Sound Processor
X2 18.432MHz
STNR-SIF
MTNR-SIF
(DO NOT STUFF)
IC126 TPA3001D1PWP
AMP-IN-L
GAIN0
GAIN1
SHUTDOWNn
S14VB-L
(Ground Connection through Power Pad)
(PowerPad will be the star ground)
MON-ROUT
MON-LOUT
IC127 BA178M08FP
12VB 8VB
+L-OUT
-L-OUT
L141 INSTPAR
(9 VIAS INSIDE THE PACKAGE, 5 ON THE PAD, 0.33mm)
IC125 TPA3001D1PWP
AMP-IN-R
S14VB-R
+R-OUT
-R-OUT
L142 INSTPAR
MON-OUT-MUTE
Q165 KSC1623-Y
Q164 KSC1623-Y
Q162 KSC1623-Y
Q163 KSC1623-Y
PC-L
PC-R
DVI-L
DVI-R
SUB-L
SUB-R
MAIN-L
MAIN-R
CN246 YFAW025-110
SDATA-OUT
SDATA-IN
BCLK
DELAY1
DELAY2
DEFAULT
CN228's right side pin is No.1
left side pin is No.4
CN228
+R-OUT
-R-OUT
+L-OUT
-L-OUT
(8 Ohm speaker)
L186 3.3UH
To Sound Delay Module
[Use BN95-00368A]

7-1-8 M1_PCF8574_UART

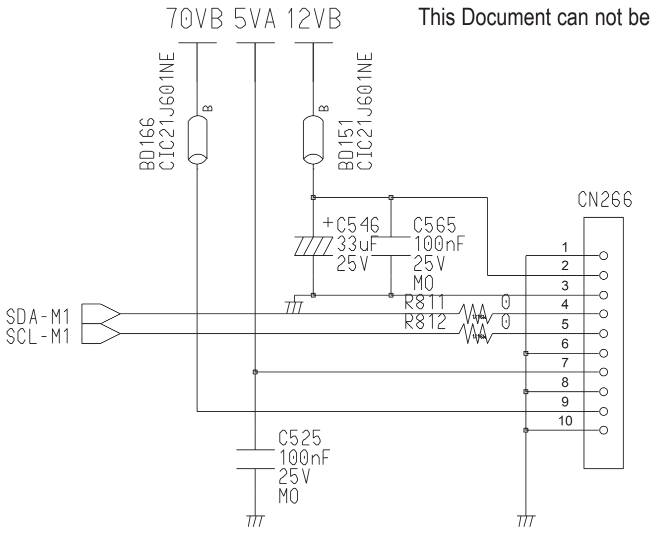
This Document can not be used without Samsung's authorization.


5VA
(PLACE NEAR EACH POWER PIN)
3.3VA-M1
Place near the M1 uCom(IC144)
IC135
KA78RM33D
IN OUT
GND
C724 10uF 16V
C637 100nF 25V
C581 330uF 16V
C629 100nF 25V
C641 100nF 25V
C642 100nF 25V
C643 100nF 25V
5VA
5VA-M1
BD160
CIC21J601NE
C595 10uF 16V
C633 100nF 25V
2.5VA-M1
IC137
LF25CDT
C725 10uF 16V
C638 100nF 25V
C582 330uF 16V
C630 100nF 25V
C644 100nF 25V
C645 100nF 25V
C646 100nF 25V
C647 100nF 25V
5VA-8574
BD178
CIC21J601NE
C730 10uF 16V
C761 100nF 25V
R1007 10K
R1013 10K
IC156
PCF8574ATS
/INT SCL N.C. SDA VDD A0 A1 N.C. A2 P0
P7 P6 N.C. P5 P4 VSS P3 N.C. P2 P1
R1000 R1001 R1002 R1003 R1004 R1005 R1006 10K
R1021 R1022 R1023 R1024 R1025 R1026 R1027 1K
COMP2-DET
COMP1-DET
SIDE-SDET
S2-DET
S1-DET
SIDE-VDET
V2-DET
SCL-A
SDA-A
R1061 100
R1060 100
C762 100nF 25V
V1-DET
R1028 1K
I/O Expander for Jack ID
IC157
PCF8574ATS
R1141 R1140 R1015 R1142 R1009 R1010 R1011 10K
R1014 10K
R1063 100
R1062 100
R1012 10K
C763 100nF 25V
R1029 R1030 R1031 R1032 R1047 R1114 R1132 R1133 1K
DEFAULT
DELAY2
DELAY1
FAN-SW
FAN-ERROR
GAIN1
GAIN0
I/O Expander for other function
5VA-M1
R1119 4.7K 1/16W
R1120 2.2K 1/16W
POWER-SW
R1109 10K 1/16W
Q156 KSC1623-Y
M1 uCom
IC144
SDA555X-OTP
P0_0 P0_1 P0_2 P0_3 P0_4 P0_5 P0_6 P0_7 VDD2_5-1 VSS_1 VDD3_3_1 CVBS VDDA2_5_1 VSSA_1 P2_0 P2_1 P2_2 P2_3 HS_SSC VS P3_0 P3_1 P3_2 P3_3 P3_4 P3_5
P1_7 P1_6 P1_5 P1_4 P1_3 P1_2 P1_1 P1_0 VDD3_3_3 VSS_3 VDD2_5_2 BLANK_COR B G R VDDA2_5_2 VSSA_2 XTAL2 XTAL1 RST_ P4_3 P4_2 VDD3_3_2 VSS_2 P3_7 P3_6
IC133
AT24C16AN-10SI-2.7
NC NC NC VSS VCC /WC SCL SDA
R849 R850 R848 R852 R845 R846 4.7K
R1165 4.7K
R875 R873 R874 R876 R877 R879 R880 100
R878 470
LAMP-ERROR
SDA-M1
SCL-M1
SOUND-MUTE
R1147 1K 1/16W
R1167 0 1/16W
Do not stuff in USA Model
CAP-CVBS
R825 470 1/16W
C656 470pF 50V
C640 100nF 25V MATERIAL
R1180 1K R1181 1K R1186 4.7K
R866 100 MON-OUT-MUTE
R867 100
R868 470 DDP-READY
R1121 1K 1/16W
R869 100 MD-nRESET
R870 100 DLP-SYNCVAL
R871 100 PWRGOOD
R872 100 POD-SW
3.3VA-M1
R840 1K 1/16W
IC138
KIA7025AP
OUT IN GND
C783 10uF 16V
R806 820ohm 1/10W
C655 10nF 50V MO
C820 100nF 25V
X3 HC-49/SM5H 6MHz
C618 0.03nF 50V MO
C619 0.03nF 50V MO
R894 100
R1091 4.7K 1/16W
R954 100 1/16W
CPU-RESETn
R999 4.7K 1/16W
Q155 KSC1623-Y
R890 100 CPU-INT
R891 100 TxDM
R1126 100
2.5VA-M1 5VA-M1
R817 R818 R1116 R1117 R1118 4.7K
R898 100 R899 100
KEY2 KEY1 KEY-PWR LED3 RxDM IR LED2 LED1
R881 100 R882 100 R908 100 R888 100
R887 100 R886 100 R885 100
R883 100 R884 100
C818 10nF 50V
C819 10nF 50V
D296 RLZ3.9B D297 RLZ3.9B D301 PMLL4148
D300 RLZ3.9B D299 RLZ3.9B D298 RLZ3.9B D302 PMLL4148
C651 10nF 50V MO
C676 10nF 50V MO
C677 10nF 50V MO

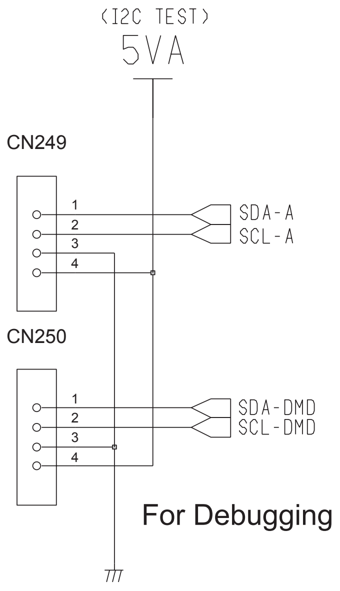
Port 0.6... Option_A Buyer Ident (KOR:Low, USA:High)
Port 2.0... Option_B Product Ident (DLP:Low)
Port 2.1... Option_C Product Ident (DLP:Low)

7-1-9 Signal_Connection

This Document can not be used without Samsung's authorization.


70VB
5VA
12VB
BD166
CIC21J601NE
BD151
CIC21J601NE
B
C546
33uF
25V
C565
100nF
25V
MO
R811 0
R812 0
SDA-M1
SCL-M1
CN266
1
2
3
4
5
6
7
8
9
10
C525
100nF
25V
MO

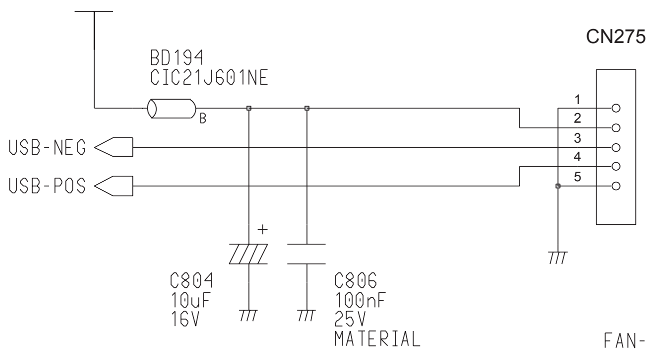
From/To Sub-Detect PCB


(I2C TEST)
5VA
CN249
1
2
3
4
SDA-A
SCL-A
CN250
1
2
3
4
SDA-DMD
SCL-DMD

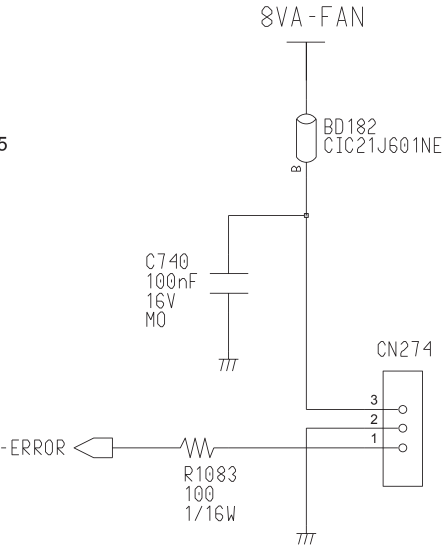
For Debugging

Caution..

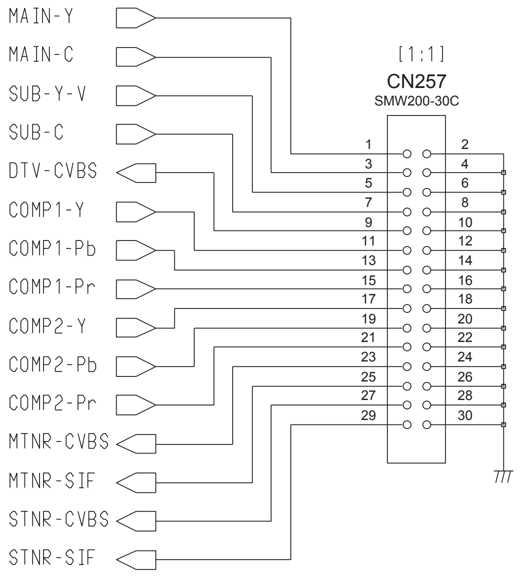
If you have an old 4pin Connector,
use pin number 2 to 5, instead of 1


5VB
BD194
CIC21J601NE
B
USB-NEG
USB-POS
CN275
1
2
3
4
5
C804
10uF
16V
C806
100nF
25V
MATERIAL

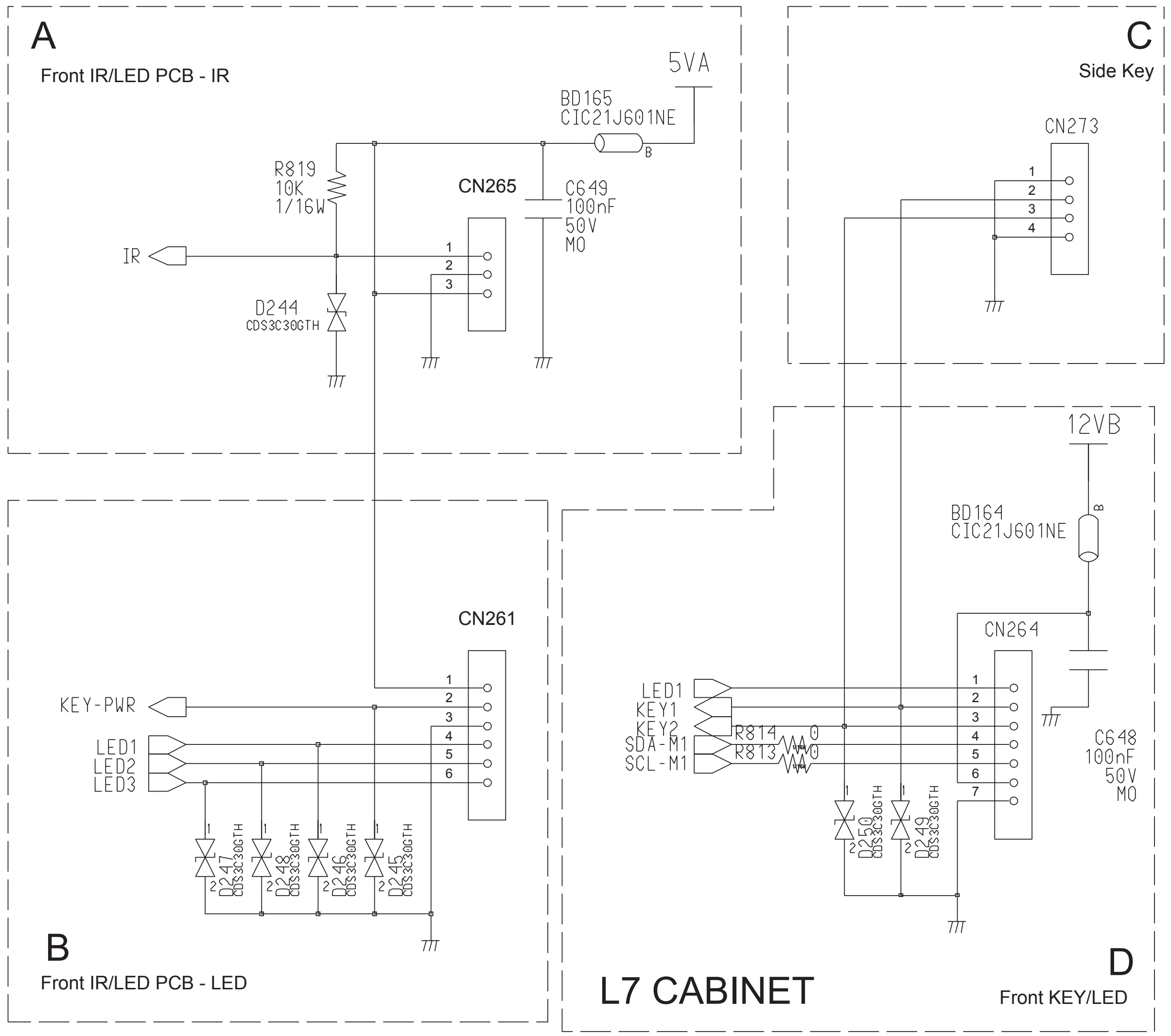
For Soft-Upgrade using USB

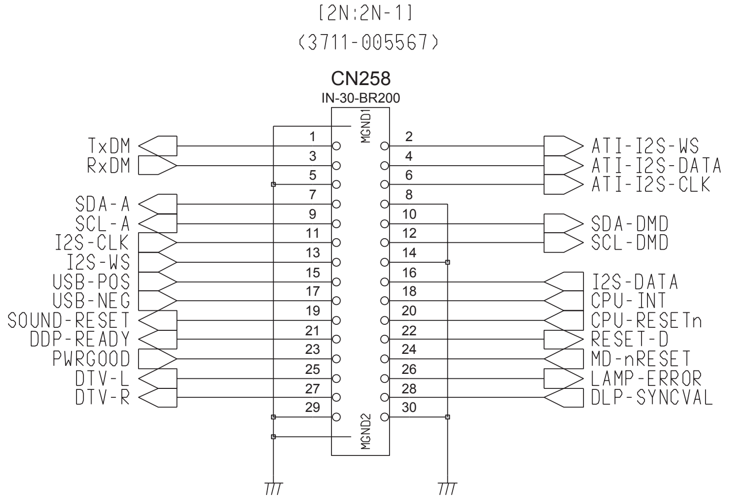

8VA-FAN
BD182
CIC21J601NE
B
C740
100nF
16V
MO
CN274
3
2
1
FAN-ERROR
R1083
100
1/16W

CableCARD Cooling FAN


MAIN-Y
MAIN-C
SUB-Y-V
SUB-C
DTV-CVBS
COMP1-Y
COMP1-Pb
COMP1-Pr
COMP2-Y
COMP2-Pb
COMP2-Pr
MTNR-CVBS
MTNR-SIF
STNR-CVBS
STNR-SIF
[1:1]
CN257
SMW200-30C
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30

AV Signal Connection
Between Analog and Digital


A
Front IR/LED PCB - IR
5VA
BD165
CIC21J601NE
B
R819
10K
1/16W
CN265
1
2
3
C649
100nF
50V
MO
IR
D244
CDS3C30GTH
C
Side Key
CN273
1
2
3
4
12VB
BD164
CIC21J601NE
CN264
1
2
3
4
5
6
7
LED1
KEY1
KEY2
SDA-M1
SCL-M1
R814 0
R813 0
C648
100nF
50V
MO
D250
D249
CDS3C30GTH
CN261
1
2
3
4
5
6
KEY-PWR
LED1
LED2
LED3
D247
D248
D246
D245
CDS3C30GTH
B
Front IR/LED PCB - LED
L7 CABINET
D
Front KEY/LED


[2N:2N-1]
(3711-005567)
CN258
IN-30-BR200
MGND1
MGND2
TxDM
RxDM
SDA-A
SCL-A
I2S-CLK
I2S-WS
USB-POS
USB-NEG
SOUND-RESET
DDP-READY
PWRGOOD
DTV-L
DTV-R
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
ATI-I2S-WS
ATI-I2S-DATA
ATI-I2S-CLK
SDA-DMD
SCL-DMD
I2S-DATA
CPU-INT
CPU-RESETn
RESET-D
MD-nRESET
LAMP-ERROR
DLP-SYNCVAL

Control Signal Connection
Between Analog and Digital

A	B	C	D
1. IR	1. 5VA	1. GND	1. LED1
2. GND	2. KEY-PWR	2. KEY1	2. KEY1
3. 5VA	3. GND	3. KEY2	3. KEY2
	4. LED1	4. GND	4. SDA-M1
	5. LED2		5. SCL-M1
	6. LED3		6. 5VB
			7. GND

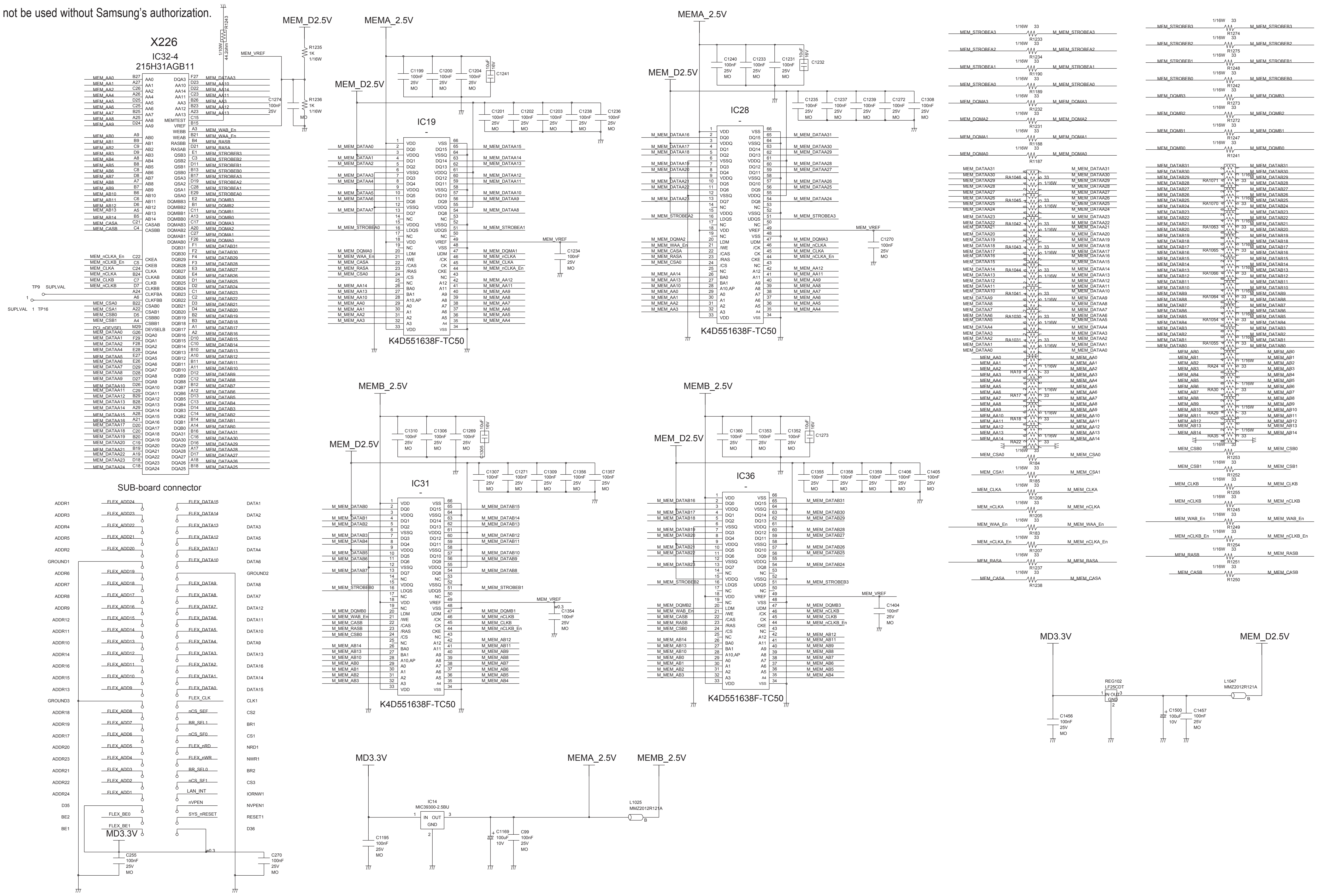
Used as follows...

L3 : A+B, C
L5 : A, B, C
L7 : A, D

7-2 Digital

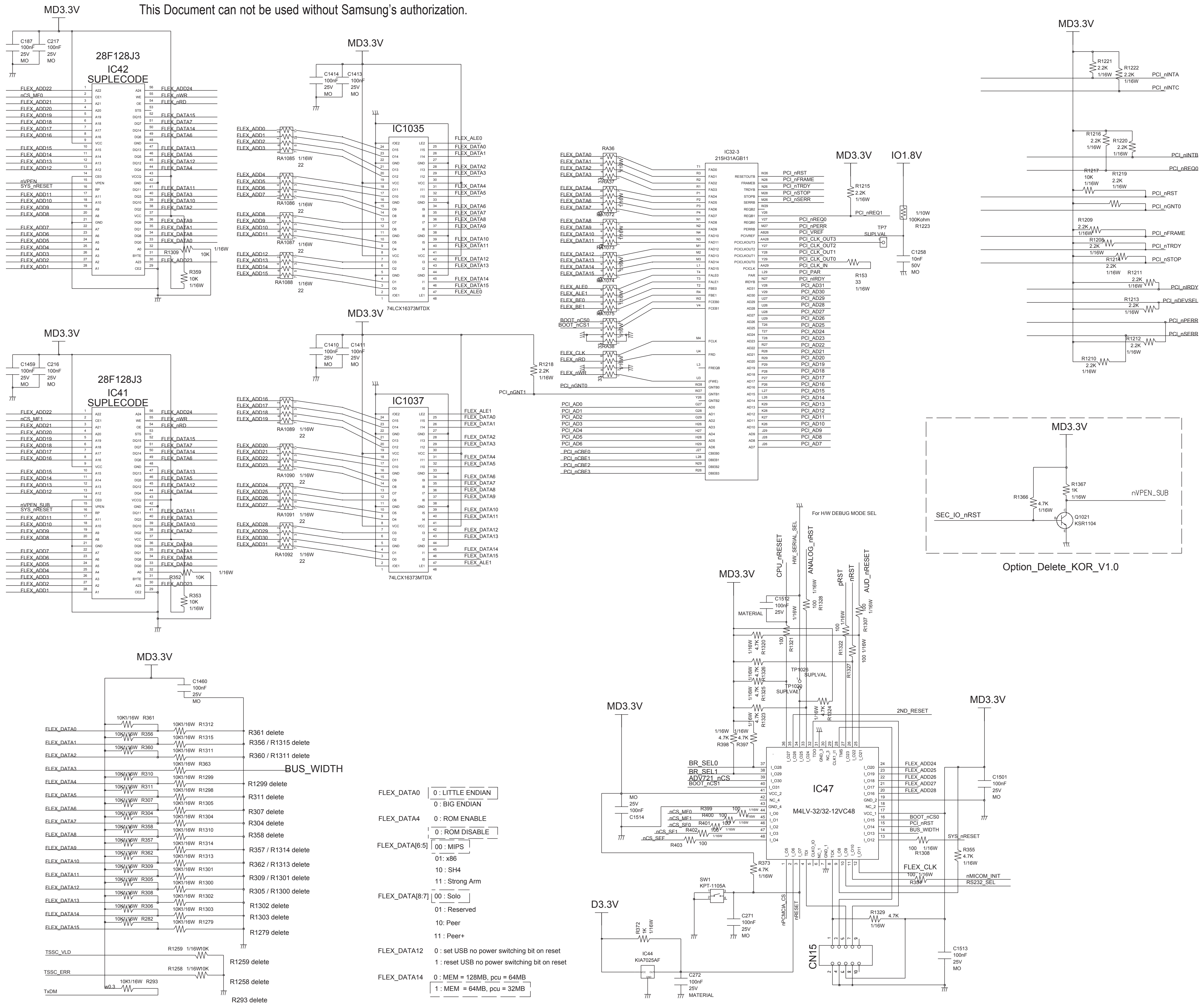
7-2-1 DTV Module-1

This Document can not be used without Samsung's authorization.


X226
IC32-4
215H31AGB11
MEM_D2.5V
MEMA_2.5V
MEMB_2.5V
IC19
K4D551638F-TC50
IC28
K4D551638F-TC50
IC31
K4D551638F-TC50
IC36
K4D551638F-TC50
SUB-board connector
MD3.3V
IC14
MIC39300-2.5BU
L1025
MMZ2012R121A
REG102
LF25CDT
L1047
MMZ2012R121A

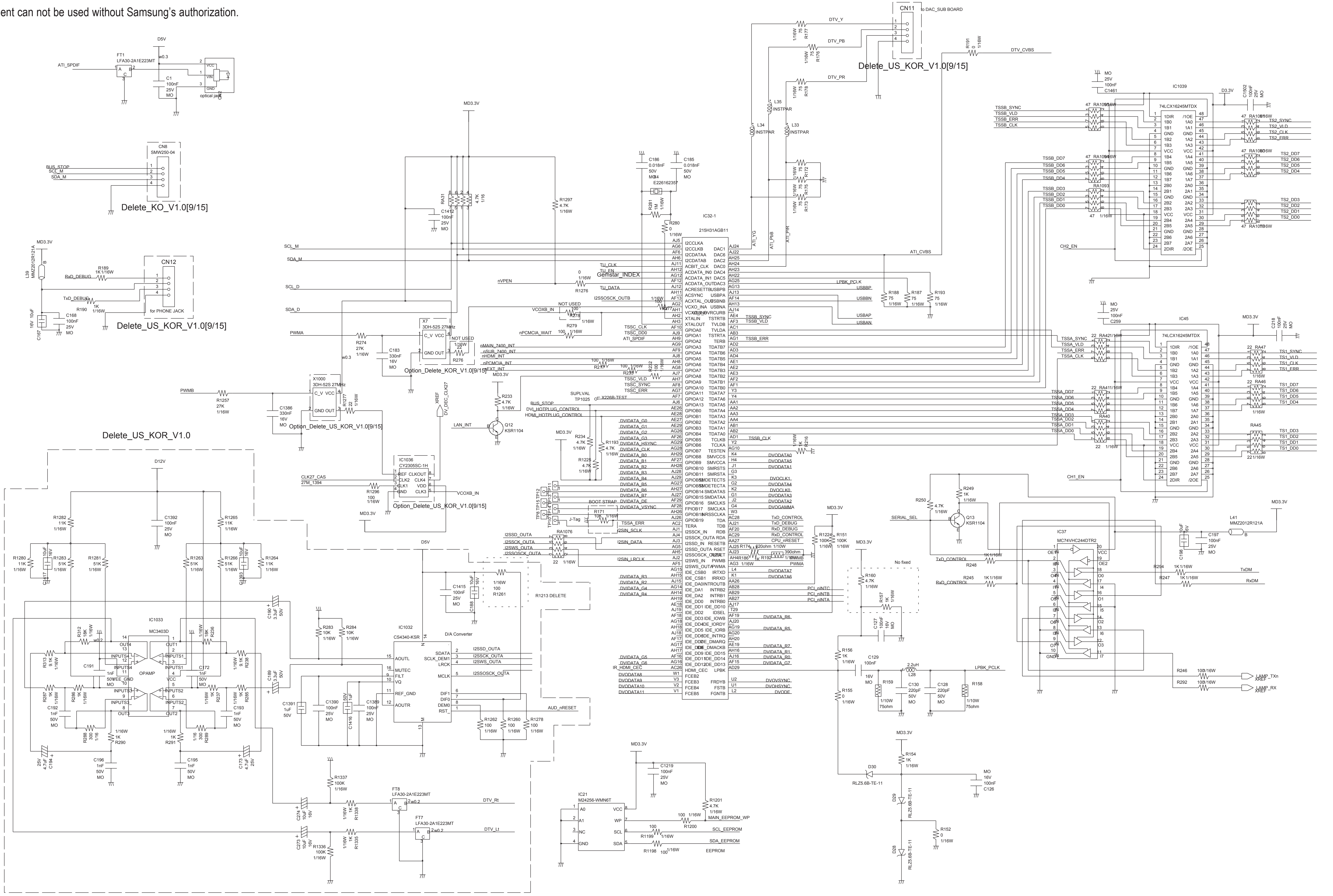
7-2-2 DTV Module-2

This Document can not be used without Samsung's authorization.


MD3.3V
28F128J3
IC42
SUPLECODE
IC41
SUPLECODE
IC1035
74LCX16373MTDX
IC1037
74LCX16373MTDX
IC32-3
215H31AGB11
IO1.8V
Option_Delete_KOR_V1.0
nVPEN_SUB
SEC_IO_nRST
Q1021
KSR1104
For H/W DEBUG MODE SEL
CPU_nRESET
HW_SERIAL_SEL
ANALOG_nRST
pRST
nRST
AUD_nRESET
IC47
M4LV-32/32-12VC48
2ND_RESET
BR_SEL0
BR_SEL1
ADV721_nCS
BOOT_nCS1
SW1
KPT-1105A
IC44
KIA7025AF
D3.3V
CN15
FLEX_CLK
BUS_WIDTH
R361 delete
R356 / R1315 delete
R360 / R1311 delete
R1299 delete
R311 delete
R307 delete
R304 delete
R358 delete
R357 / R1314 delete
R362 / R1313 delete
R309 / R1301 delete
R305 / R1300 delete
R1302 delete
R1303 delete
R1279 delete
R1259 delete
R1258 delete
R293 delete
TSSC_VLD
TSSC_ERR
TxDM
FLEX_DATA0
0 : LITTLE ENDIAN
0 : BIG ENDIAN
FLEX_DATA4
0 : ROM ENABLE
0 : ROM DISABLE
FLEX_DATA[6:5]
00 : MIPS
01: x86
10 : SH4
11 : Strong Arm
FLEX_DATA[8:7]
00 : Solo
01 : Reserved
10: Peer
11 : Peer+
FLEX_DATA12
0 : set USB no power switching bit on reset
1 : reset USB no power switching bit on reset
FLEX_DATA14
0 : MEM = 128MB, pcu = 64MB
1 : MEM = 64MB, pcu = 32MB

7-2-3 DTV Module-3

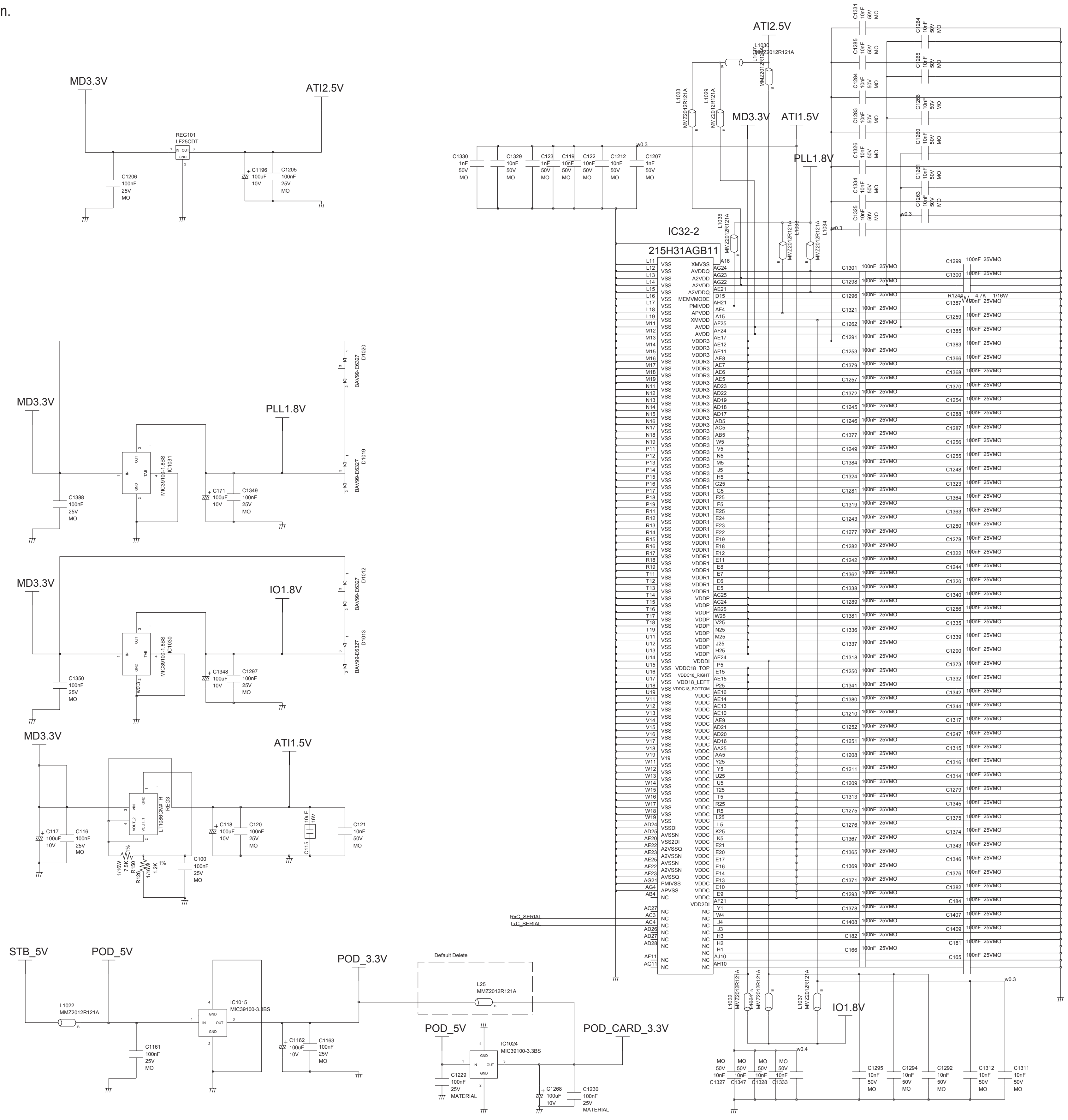
This Document can not be used without Samsung's authorization.



ATI_SPDIF
FT1
LFA30-2A1E223MT
D5V
C1
100nF
25V
MO
optical jack
CN8
SMW250-04
BUS_STOP
SCL_M
SDA_M
Delete_KO_V1.0[9/15]
MD3.3V
L39
MMZ2012R121A
RxD_DEBUG
R189
1K1/16W
TxD_DEBUG
R190
C168
100nF
25V
MO
CN12
for PHONE JACK
Delete_US_KOR_V1.0[9/15]
SCL_M
SDA_M
SCL_D
SDA_D
PWMA
PWMB
R1257
27K
1/16W
X1000
3DH-52S 27MHz
C1386
330nF
16V
MO
Option_Delete_US_KOR_V1.0[9/15]
X7
3DH-52S 27MHz
R274
27K
1/16W
C183
330nF
16V
MO
NOT USED
R276
Option_Delete_KOR_V1.0[9/15]
RA31
4.7K
1/16
C143
100nF
25V
MO
R1297
4.7K
1/16W
MD3.3V
Delete_US_KOR_V1.0
D12V
IC1033
MC3403D
OPAMP
R1282
11K
1/16W
R1265
11K
1/16W
C1392
100nF
25V
MO
R1280
R1283
R1281
R1263
R1266
R1264
C191
C172
C192
C193
C196
C195
C194
C173
R290
R291
C190
C189
CLK27_CAS
27M_1394
IC1036
CY2305SC-1H
REF CLKOUT
CLK2 CLK4
CLK1 VDD
GND CLK3
R1296
100
1/16W
VCOXB_IN
Option_Delete_US_KOR_V1.0[9/15]
MD3.3V
D5V
IC1032
CS4340-KSR
D/A Converter
AOUTL
MUTEC
FILT
VQ
REF_GND
AOUTR
SDATA
SCLK_DEM1
LRCK
MCLK
DIF1
DIF0
DEM0
RST_
I2SSD_OUTA
I2SSCK_OUTA
I2SWS_OUTA
I2SSOSCK_OUTA
C1415
100nF
25V
MO
R1261
R1213 DELETE
R283
10K
R284
10K
C1391
1uF
50V
C1390
100nF
25V
MO
C1389
100nF
25V
MO
R1262
R1260
R1278
AUD_nRESET
R1337
100K
1/16W
FT8
LFA30-2A1E223MT
DTV_Rt
FT7
LFA30-2A1E223MT
DTV_Lt
R1338
R1335
R1336
100K
1/16W
C274
C273
R233
4.7K
1/16W
Q12
KSR1104
LAN_INT
XREF
DV_DEC_CLK27
nMAIN_7400_INT
nSUB_7400_INT
nHDMI_INT
nPCMCIA_INT
nEXT_INT
nVPEN
nPCMCIA_WAIT
VCOXB_IN
R277
R278
R279
SUPLVAL
TP1025
X226B-TEST
BUS_STOP
DVI_HOTPLUG_CONTROL
HDMI_HOTPLUG_CONTROL
MD3.3V
R234
4.7K
1/16W
R1193
4.7K
1/16W
R1225
4.7K
1/16W
BOOT STRAP
R171
10K
J-Tag
TSSA_ERR
I2SIN_SCLK
I2SIN_DATA
I2SIN_LRCLK
RA1076
I2SSD_OUTA
I2SSCK_OUTA
I2SWS_OUTA
I2SSOSCK_OUTA
DVIDATA_R3
DVIDATA_R2
DVIDATA_G4
DVIDATA_R4
DVIDATA_G5
DVIDATA_G6
IR_HDMI_CEC
DVODATA8
DVODATA9
DVODATA10
DVODATA11
C186
0.018nF
50V
MO
C185
0.018nF
50V
MO
X4
E226162357
R281
1M
R280
0
1/16W
IC32-1
215H31AGB11
TU_CLK
TU_EN
Gemstar_INDEX
TU_DATA
I2SSOSCK_OUTB
R1276
NOT USED
TSSC_CLK
TSSC_DD0
ATI_SPDIF
TSSC_VLD
TSSC_SYNC
TSSC_ERR
I2CCLKA
I2CCLKB
I2CDATAA
I2CDATAB
ACBIT_CLK
ACDATA_IN0
ACDATA_IN1
ACDATA_OUT
ACRESET
ACSYNC
ACXTAL_OUT
VCXO_INA
VCXO_INB
XTALIN
XTALOUT
TSTRTB
TVLDB
TERRB
TDATB0-TDATB7
TDATA0-TDATA7
TCLKB
TCLKA
TESTEN
SMVCCS
SMVCCA
SMRSTS
SMRSTA
SMDETECTS
SMDETECTA
SMDATAS
SMDATAA
SMCLKS
SMCLKA
TDA
TDB
I2SSCK_IN
I2SSCK_OUTA
I2SSD_IN
I2SSD_OUTA
I2SSOSCK_OUTA
I2SWS_IN
I2SWS_OUTA
IDE_CS80
IDE_CS81
IDE_DA0-IDE_DA2
IDE_DD0-IDE_DD15
IDE_DMACK
IDE_DMARQ
IDE_INTRQ
IDE_IORDY
IDE_IOR
IDE_IOW
IDE_RESET
HDMI_CEC
FCEB2
FCEB3
FCEB4
FCEB5
RTXD
IRRXD
INTRB0-INTRB2
PWMA
PWMB
RESETB
LPBK
FRDYB
FSTB
FGNTB
DAC1
DAC0
DAC4
DAC5
DAC2
DAC3
USBPA
USBNA
USBPB
USBNB
ATI_YG
ATI_PB
ATI_PR
ATI_CVBS
LPBK_PCLK
USBBP
USBBN
USBAP
USBAN
TSSB_SYNC
TSSB_VLD
TSSB_ERR
TSSB_CLK
DVODATA0-DVODATA7
DVOCLK0
DVOCLK1
DVOGAMMA
TxD_CONTROL
TxD_DEBUG
RxD_DEBUG
RxD_CONTROL
CPU_nRESET
PWMB
PWMA
PCI_nINTC
PCI_nINTB
PCI_nINTA
DVIDATA_R5
DVIDATA_R6
DVIDATA_R7
DVIDATA_R1
DVIDATA_R0
DVIDATA_G7
DVOVSYNC
DVOHSYNC
DVODE
DVIDATA_G0-DVIDATA_G3
DVIDATA_HSYNC
DVIDATA_CLK
DVIDATA_B0-DVIDATA_B7
DVIDATA_DE
DVIDATA_VSYNC
R188
75
1/16W
R187
75
1/16W
R193
75
1/16W
CN11
to DAC_SUB BOARD
DTV_Y
DTV_PB
DTV_PR
R177
R176
R178
75
1/16W
Delete_US_KOR_V1.0[9/15]
R191
0
1/16W
DTV_CVBS
L35
INSTPAR
L34
INSTPAR
L33
INSTPAR
R174
R175
R173
75
1/16W
MO
25V
100nF
C1461
IC1039
74LCX16245MTDX
D3.3V
C1502
100nF
25V
MO
TSSB_SYNC
TSSB_VLD
TSSB_ERR
TSSB_CLK
TSSB_DD0-TSSB_DD7
RA1094
RA1093
47 1/16W
1DIR
/1OE
1B0-1B7
1A0-1A7
2B0-2B7
2A0-2A7
2DIR
/2OE
VCC
GND
RA1095
RA1096
RA1097
TS2_SYNC
TS2_VLD
TS2_CLK
TS2_ERR
TS2_DD0-TS2_DD7
CH2_EN
MO
25V
100nF
C259
IC45
74LCX16245MTDX
MD3.3V
C218
100nF
25V
MO
TSSA_SYNC
TSSA_VLD
TSSA_ERR
TSSA_CLK
TSSA_DD0-TSSA_DD7
RA42
RA41
RA40
RA47
RA46
RA45
22 1/16W
TS1_SYNC
TS1_VLD
TS1_CLK
TS1_ERR
TS1_DD0-TS1_DD7
CH1_EN
R216
TSSB_CLK
R249
1K
1/16W
R250
4.7K
1/16W
Q13
KSR1104
SERIAL_SEL
MD3.3V
IC37
MC74VHC244DTR2
OE1
OE2
VCC
GND
C198
10uF
16V
C197
100nF
25V
MO
L41
MMZ2012R121A
MD3.3V
R248
R245
1K1/16W
TxD_CONTROL
RxD_CONTROL
R294
R247
1K1/16W
TxDM
RxDM
R246
R292
100 1/16W
LAMP_TXn
LAMP_RX
XREF
No fixed
R160
4.7K
1/16W
R157
1K
1/16W
C127
100nF
16V
MO
R1224
100K
1/16W
R151
100K
1/16W
MD3.3V
R156
1K
1/16W
C129
100nF
16V
MO
L28
2.2uH
R159
1/10W
75ohm
C130
220pF
50V
MO
C128
220pF
50V
MO
R158
1/10W
75ohm
LPBK_PCLK
R155
0
1/16W
MD3.3V
R154
1K
1/16W
D30
RLZ5.6B-TE-11
MO
16V
100nF
C126
D29
RLZ5.6B-TE-11
D28
RLZ5.6B-TE-11
R152
0
1/16W
MD3.3V
C1219
100nF
25V
MO
IC21
M24256-WMN6T
A0
A1
NC
GND
VCC
WP
SCL
SDA
R1201
4.7K
1/16W
R1200
MAIN_EEPROM_WP
R1199
SCL_EEPROM
R1198
SDA_EEPROM
EEPROM

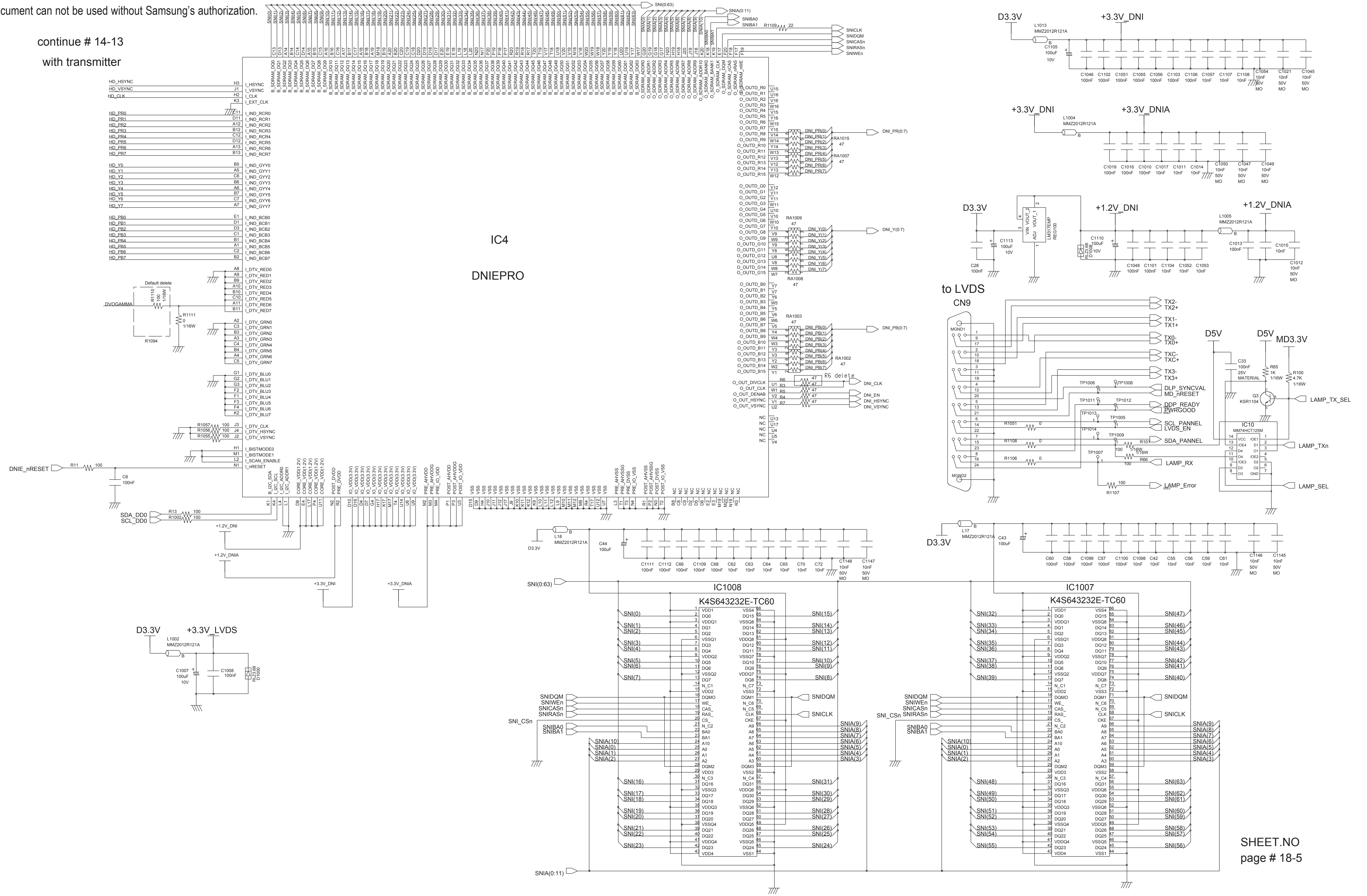
7-2-4 DTV Module-4

This Document can not be used without Samsung's authorization.


MD3.3V
ATI2.5V
REG101
LF25CDT
C1206
C1196
C1205
MD3.3V
PLL1.8V
MIC39100-1.8BS
IC1031
BAV99-E6327
D1020
D1019
C1388
C171
C1349
MD3.3V
IO1.8V
MIC39100-1.8BS
IC1030
D1012
D1013
C1350
C1348
C1297
MD3.3V
ATI1.5V
LT1086CM#TR
REG3
C117
C116
C118
C120
C115
C121
R150
R129
C100
STB_5V
POD_5V
L1022
MMZ2012R121A
IC1015
MIC39100-3.3BS
C1161
C1162
C1163
POD_3.3V
Default Delete
L25
MMZ2012R121A
POD_5V
IC1024
MIC39100-3.3BS
POD_CARD_3.3V
C1229
C1268
C1230
ATI2.5V
MD3.3V
ATI1.5V
PLL1.8V
IC32-2
215H31AGB11
RxC_SERIAL
TxC_SERIAL
IO1.8V
C1330
C1329
C123
C119
C122
C1212
C1207
C1295
C1294
C1292
C1312
C1311
C1327
C1347
C1328
C1333

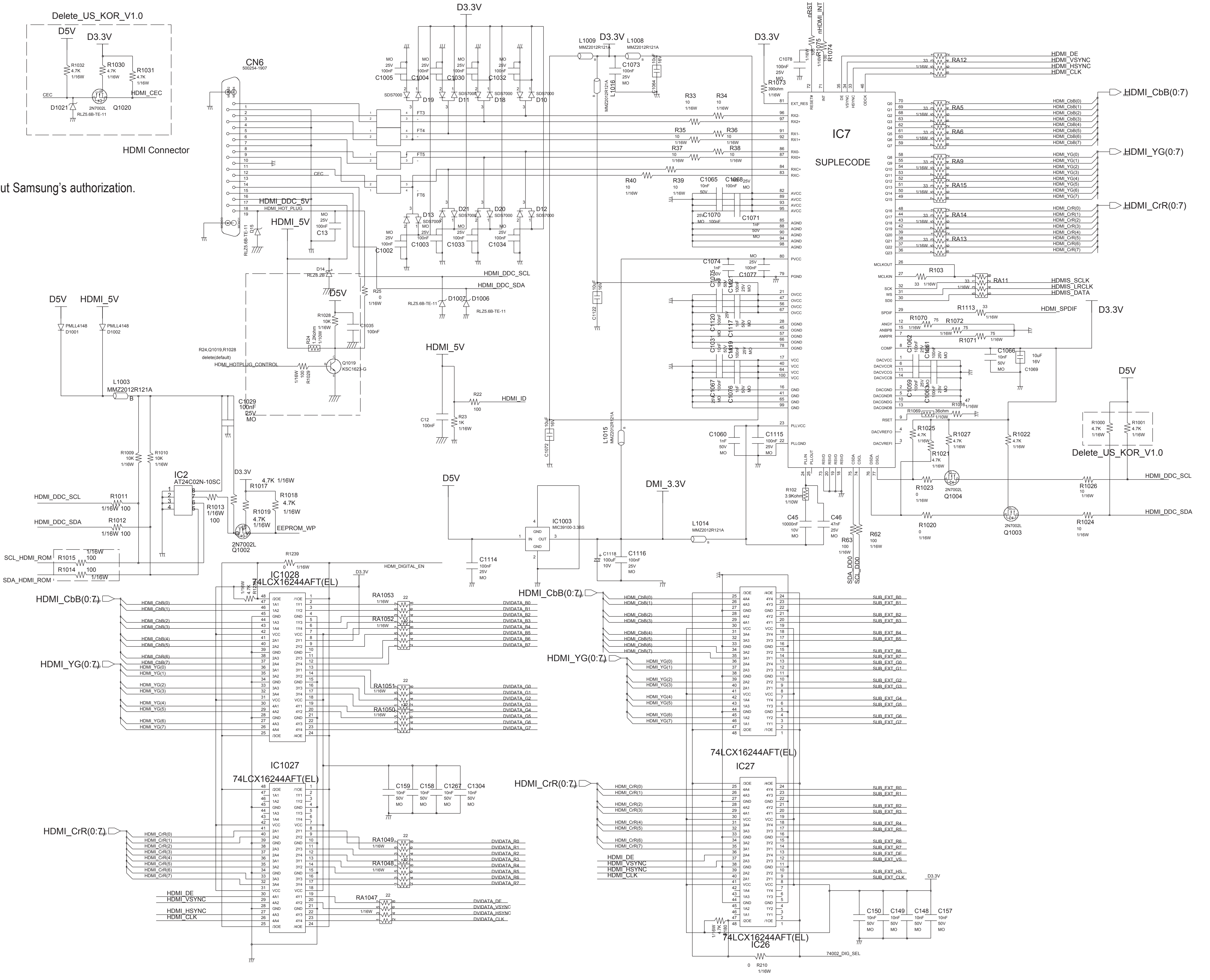
7-2-5 DTV Module-5

This Document can not be used without Samsung's authorization.


continue # 14-13
with transmitter
IC4
DNIEPRO
HD_HSYNC
HD_VSYNC
HD_CLK
HD_PR0
HD_PR7
HD_Y0
HD_Y7
HD_PB0
HD_PB7
Default delete
DVOGAMMA
R1110
R1111
R1094
R1057
R1056
R1055
DNIE_nRESET
R11
C6
100nF
SDA_DD0
SCL_DD0
R13
R1002
+1.2V_DNI
+1.2V_DNIA
+3.3V_DNI
+3.3V_DNIA
SNI(0:63)
SNIA(0:11)
SNIBA0
SNIBA1
R1109
SNICLK
SNIDQM
SNICASn
SNIRASn
SNIWEn
DNI_PR(0:7)
RA1015
RA1007
DNI_Y(0:7)
RA1009
RA1008
DNI_PB(0:7)
RA1003
RA1002
R6 delete
DNI_CLK
DNI_EN
DNI_HSYNC
DNI_VSYNC
D3.3V
+3.3V_DNI
L1013
MMZ2012R121A
C1105
100uF
10V
+3.3V_DNIA
L1004
D3.3V
+1.2V_DNI
+1.2V_DNIA
C1113
C28
LM317EMP
L1005
to LVDS
CN9
TX2-
TX2+
TX1-
TX1+
TX0-
TX0+
TXC-
TXC+
TX3-
TX3+
DLP_SYNCVAL
MD_nRESET
DDP_READY
PWRGOOD
SCL_PANNEL
LVDS_EN
SDA_PANNEL
LAMP_RX
LAMP_Error
D5V
D5V
MD3.3V
C33
R65
R100
Q3
KSR1104
LAMP_TX_SEL
IC10
MM74HCT125M
LAMP_TXn
LAMP_SEL
R1051
R1108
R1106
R1107
D3.3V
+3.3V_LVDS
L1002
MMZ2012R121A
C1007
C1008
D1000
L18
MMZ2012R121A
C44
100uF
L17
C43
IC1008
K4S643232E-TC60
IC1007
K4S643232E-TC60
SNI_CSn
SHEET.NO
page # 18-5

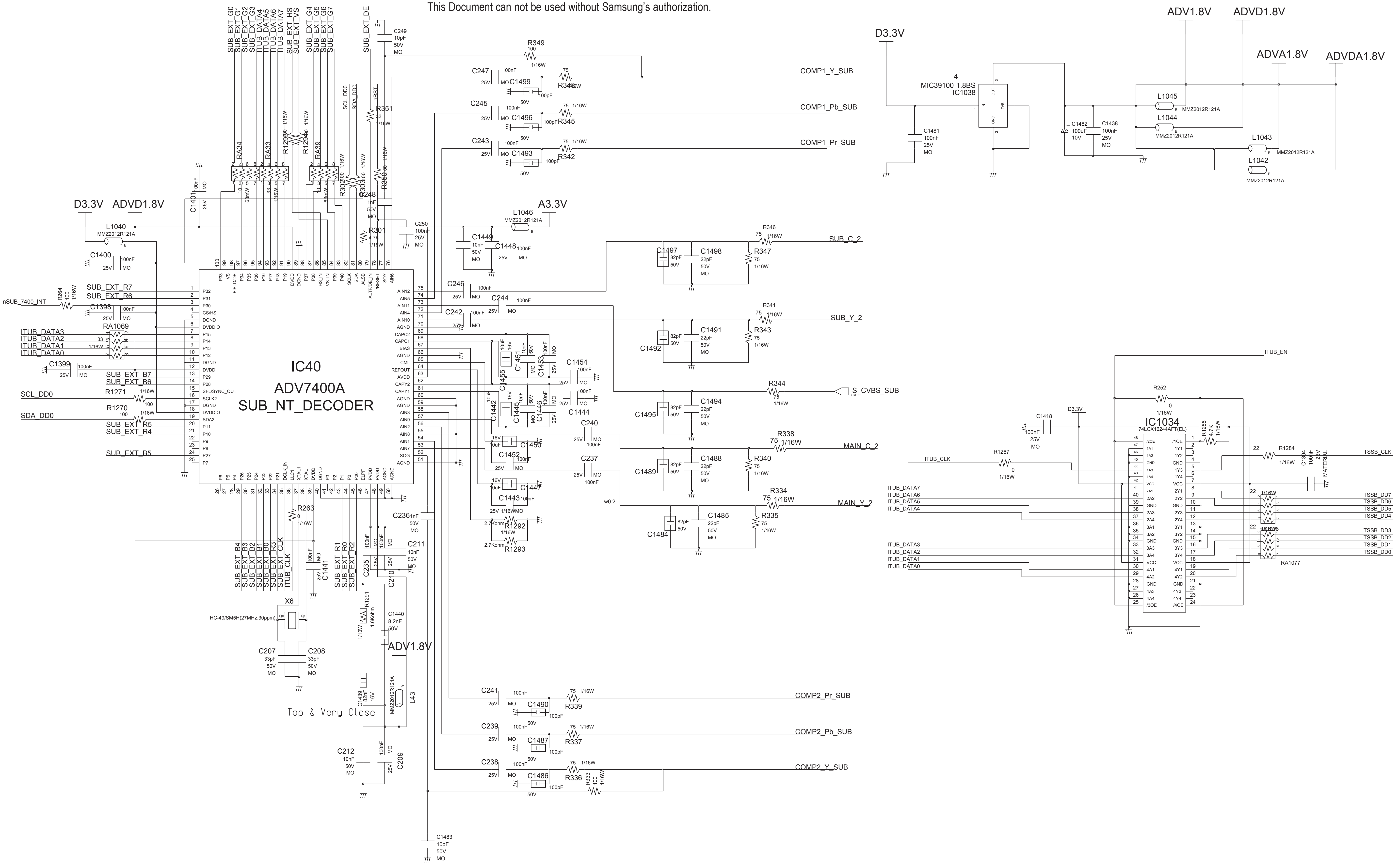
7-2-6 DTV Module-6

This Document can not be used without Samsung's authorization.

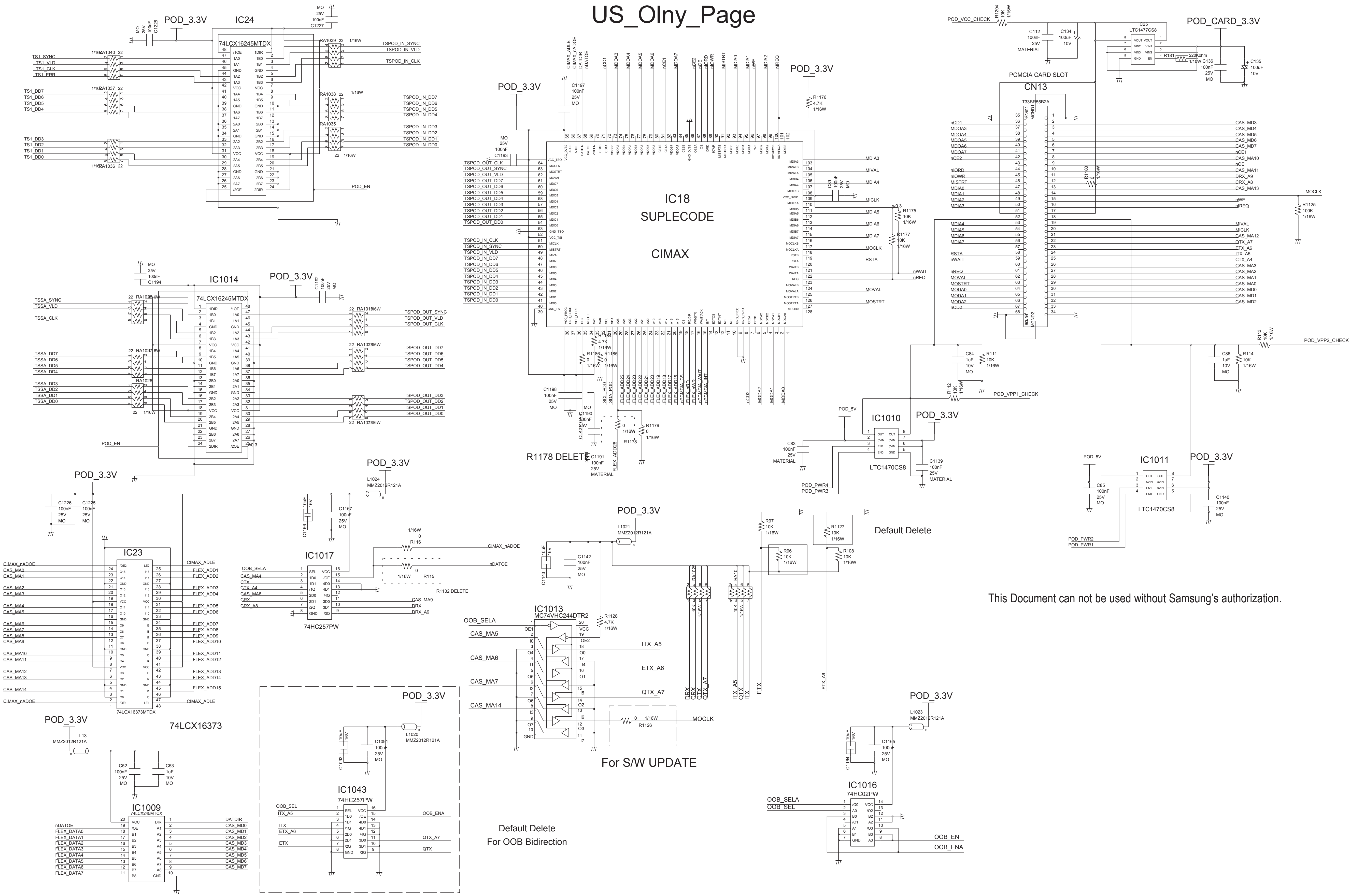

Delete_US_KOR_V1.0
D5V
D3.3V
R1032
R1030
R1031
CEC
HDMI_CEC
D1021
Q1020
HDMI Connector
CN6
HDMI_DDC_5V
HDMI_HOT_PLUG
HDMI_5V
C13
D14
D5V
HDMI_DDC_SCL
HDMI_DDC_SDA
D1007
D1006
R25
R1028
C1035
R24
R24,Q1019,R1028
delete(default)
HDMI_HOTPLUG_CONTROL
Q1019
KSC1623-G
D3.3V
C1005
C1004
C1030
C1032
D19
D11
D18
D10
FT3
FT4
FT5
FT6
D13
D21
D20
D12
C1002
C1003
C1033
C1034
L1009
L1008
C1073
L1016
C1064
HDMI_5V
R22
HDMI_ID
C12
R23
D5V
HDMI_5V
D1001
D1002
L1003
MMZ2012R121A
C1029
R1009
R1010
IC2
AT24C02N-10SC
R1017
R1018
R1019
R1013
EEPROM_WP
Q1002
2N7002L
HDMI_DDC_SCL
R1011
HDMI_DDC_SDA
R1012
SCL_HDMI_ROM
R1015
SDA_HDMI_ROM
R1014
R1239
HDMI_DIGITAL_EN
IC1028
74LCX16244AFT(EL)
HDMI_CbB(0:7)
HDMI_YG(0:7)
HDMI_CrR(0:7)
RA1053
RA1052
RA1051
RA1050
RA1049
RA1048
RA1047
DVIDATA_B0
DVIDATA_B7
DVIDATA_G0
DVIDATA_G7
DVIDATA_R0
DVIDATA_R7
DVIDATA_DE
DVIDATA_VSYNC
DVIDATA_HSYNC
DVIDATA_CLK
IC1027
74LCX16244AFT(EL)
HDMI_DE
HDMI_VSYNC
HDMI_HSYNC
HDMI_CLK
C159
C158
C1267
C1304
D5V
IC1003
MIC39100-3.3BS
C1114
C1118
C1116
DMI_3.3V
L1014
C1072
L1015
C1122
IC7
SUPLECODE
D3.3V
C1078
R1073
R1075
R1074
nRST
nHDMI_INT
R33
R34
R35
R36
R37
R38
R40
R39
C1065
C1068
C1070
C1071
C1074
C1077
C1060
C1115
R102
C45
C46
R63
R62
SDA_DD0
SCL_DD0
RA12
RA5
RA6
RA9
RA15
RA14
RA13
RA11
R103
HDMI_CbB(0:7)
HDMI_YG(0:7)
HDMI_CrR(0:7)
HDMIS_SCLK
HDMIS_LRCLK
HDMIS_DATA
HDMI_SPDIF
R1113
R1070
R1072
R1071
C1066
C1069
D3.3V
D5V
R1000
R1001
Delete_US_KOR_V1.0
R1069
R1016
R1025
R1027
R1021
R1022
R1023
Q1004
R1026
HDMI_DDC_SCL
R1020
Q1003
R1024
HDMI_DDC_SDA
HDMI_CbB(0:7)
HDMI_YG(0:7)
74LCX16244AFT(EL)
IC27
HDMI_CrR(0:7)
SUB_EXT_B0
SUB_EXT_B7
SUB_EXT_G0
SUB_EXT_G7
SUB_EXT_R0
SUB_EXT_R7
SUB_EXT_DE
SUB_EXT_VS
SUB_EXT_HS
SUB_EXT_CLK
74LCX16244AFT(EL)
IC26
C150
C149
C148
C157
D3.3V
74002_DIG_SEL
R210

7-2-7 DTV Module-7

This Document can not be used without Samsung's authorization.


IC40
ADV7400A
SUB_NT_DECODER
D3.3V
ADVD1.8V
A3.3V
ADV1.8V
ADVA1.8V
ADVDA1.8V
MIC39100-1.8BS
IC1038
IC1034
74LCX16244AFT(EL)
COMP1_Y_SUB
COMP1_Pb_SUB
COMP1_Pr_SUB
SUB_C_2
SUB_Y_2
S_CVBS_SUB
MAIN_C_2
MAIN_Y_2
COMP2_Pr_SUB
COMP2_Pb_SUB
COMP2_Y_SUB
nSUB_7400_INT
SUB_EXT_R7
SUB_EXT_R6
SUB_EXT_R5
SUB_EXT_R4
SUB_EXT_B7
SUB_EXT_B6
SUB_EXT_B5
ITUB_DATA3
ITUB_DATA2
ITUB_DATA1
ITUB_DATA0
SCL_DD0
SDA_DD0
ITUB_EN
ITUB_CLK
TSSB_CLK
TSSB_DD7
TSSB_DD6
TSSB_DD5
TSSB_DD4
TSSB_DD3
TSSB_DD2
TSSB_DD1
TSSB_DD0
RA1077
RA1069
L1040
L1046
L1045
L1044
L1043
L1042
L43
MMZ2012R121A
X6
HC-49/SM5H(27MHz,30ppm)
C207
C208
Top & Very Close
C1483

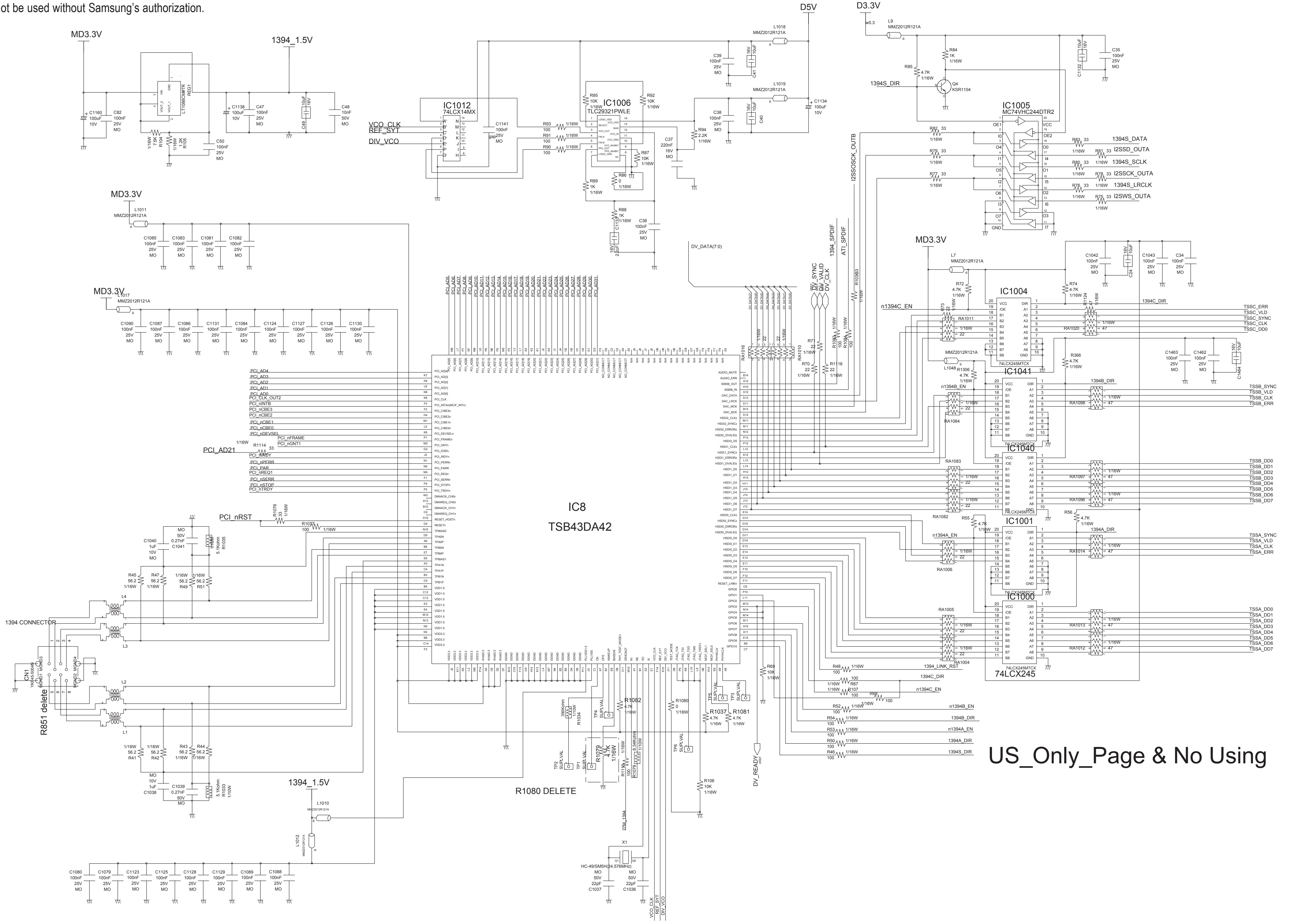
7-2-8 DTV Module-8


US_Olny_Page
POD_3.3V
IC24
74LCX16245MTDX
TS1_SYNC
TS1_VLD
TS1_CLK
TS1_ERR
TS1_DD7
TS1_DD6
TS1_DD5
TS1_DD4
TS1_DD3
TS1_DD2
TS1_DD1
TS1_DD0
TSPOD_IN_SYNC
TSPOD_IN_VLD
TSPOD_IN_CLK
TSPOD_IN_DD7
TSPOD_IN_DD6
TSPOD_IN_DD5
TSPOD_IN_DD4
TSPOD_IN_DD3
TSPOD_IN_DD2
TSPOD_IN_DD1
TSPOD_IN_DD0
POD_EN
IC1014
74LCX16245MTDX
TSSA_SYNC
TSSA_VLD
TSSA_CLK
TSSA_DD7
TSSA_DD6
TSSA_DD5
TSSA_DD4
TSSA_DD3
TSSA_DD2
TSSA_DD1
TSSA_DD0
TSPOD_OUT_SYNC
TSPOD_OUT_VLD
TSPOD_OUT_CLK
TSPOD_OUT_DD7
TSPOD_OUT_DD6
TSPOD_OUT_DD5
TSPOD_OUT_DD4
TSPOD_OUT_DD3
TSPOD_OUT_DD2
TSPOD_OUT_DD1
TSPOD_OUT_DD0
IC18
SUPLECODE
CIMAX
R1178 DELETE
PCMCIA CARD SLOT
CN13
POD_CARD_3.3V
IC25
LTC1477CS8
POD_VCC_CHECK
POD_VPP1_CHECK
POD_VPP2_CHECK
IC1010
LTC1470CS8
IC1011
LTC1470CS8
POD_5V
POD_PWR4
POD_PWR3
POD_PWR2
POD_PWR1
MOCLK
Default Delete
IC23
74LCX16373MTDX
74LCX16373
CIMAX_nADOE
CIMAX_ADLE
IC1017
74HC257PW
OOB_SELA
CAS_MA9
DRX
DRX_A9
R1132 DELETE
IC1013
MC74VHC244DTR2
OOB_SELA
CAS_MA5
CAS_MA6
CAS_MA7
CAS_MA14
ITX_A5
ETX_A6
QTX_A7
R1126
For S/W UPDATE
IC1009
74LCX245MTCX
nDATOE
DATDIR
IC1043
74HC257PW
OOB_SEL
ITX_A5
ITX
ITX_A6
ETX
OOB_ENA
QTX_A7
QTX
Default Delete
For OOB Bidirection
IC1016
74HC02PW
OOB_SELA
OOB_SEL
OOB_EN
OOB_ENA
L13
L1020
L1021
L1023
L1024
MMZ2012R121A

This Document can not be used without Samsung's authorization.

7-2-9 DTV Module-9

This Document can not be used without Samsung’s authorization.

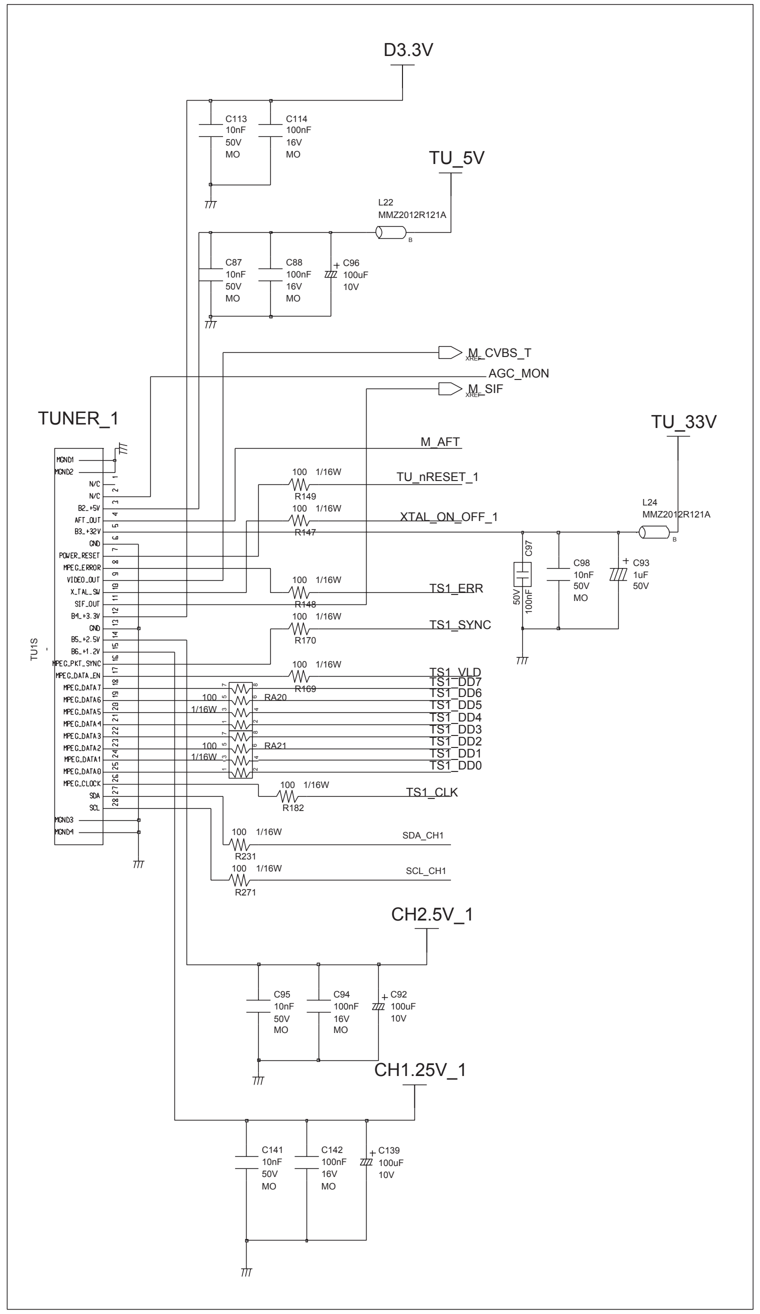


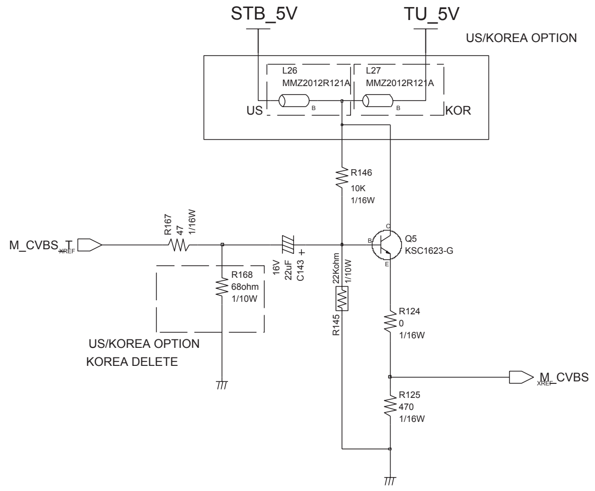
D5V
D3.3V
MD3.3V
1394_1.5V
IC1012
74LCX14MX
IC1006
TLC2932IPWLE
IC1005
MC74VHC244DTR2
VCO_CLK
REF_SYT
DIV_VCO
1394S_DIR
1394S_DATA
I2SSD_OUTA
1394S_SCLK
I2SSCK_OUTA
1394S_LRCLK
I2SWS_OUTA
I2SSOSCK_OUTB
1394_SPDIF
ATI_SPDIF
DV_SYNC
DV_VALID
DV_CLK
DV_DATA(7:0)
IC1004
74LCX245MTCX
IC1041
IC1040
IC1001
IC1000
74LCX245
n1394C_EN
1394C_DIR
n1394B_EN
1394B_DIR
n1394A_EN
1394A_DIR
TSSC_ERR
TSSC_VLD
TSSC_SYNC
TSSC_CLK
TSSC_DD0
TSSB_SYNC
TSSB_VLD
TSSB_CLK
TSSB_ERR
TSSB_DD0
TSSB_DD1
TSSB_DD2
TSSB_DD3
TSSB_DD4
TSSB_DD5
TSSB_DD6
TSSB_DD7
TSSA_SYNC
TSSA_VLD
TSSA_CLK
TSSA_ERR
TSSA_DD0
TSSA_DD1
TSSA_DD2
TSSA_DD3
TSSA_DD4
TSSA_DD5
TSSA_DD6
TSSA_DD7
1394_LINK_RST
1394S_DIR
IC8
TSB43DA42
PCI_AD21
PCI_nRST
1394 CONNECTOR
CN1
R851 delete
R1080 DELETE
DV_READY
X1
HC-49/SM5H(24.576MHz)
US_Only_Page & No Using

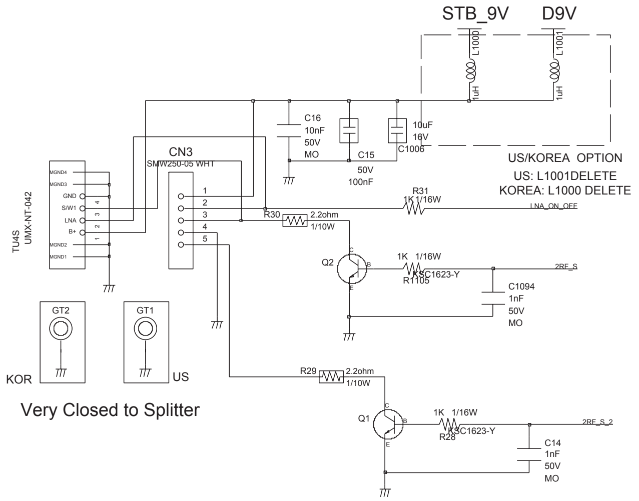
7-2-10 DTV Module-10

This Document can not be used without Samsung's authorization.

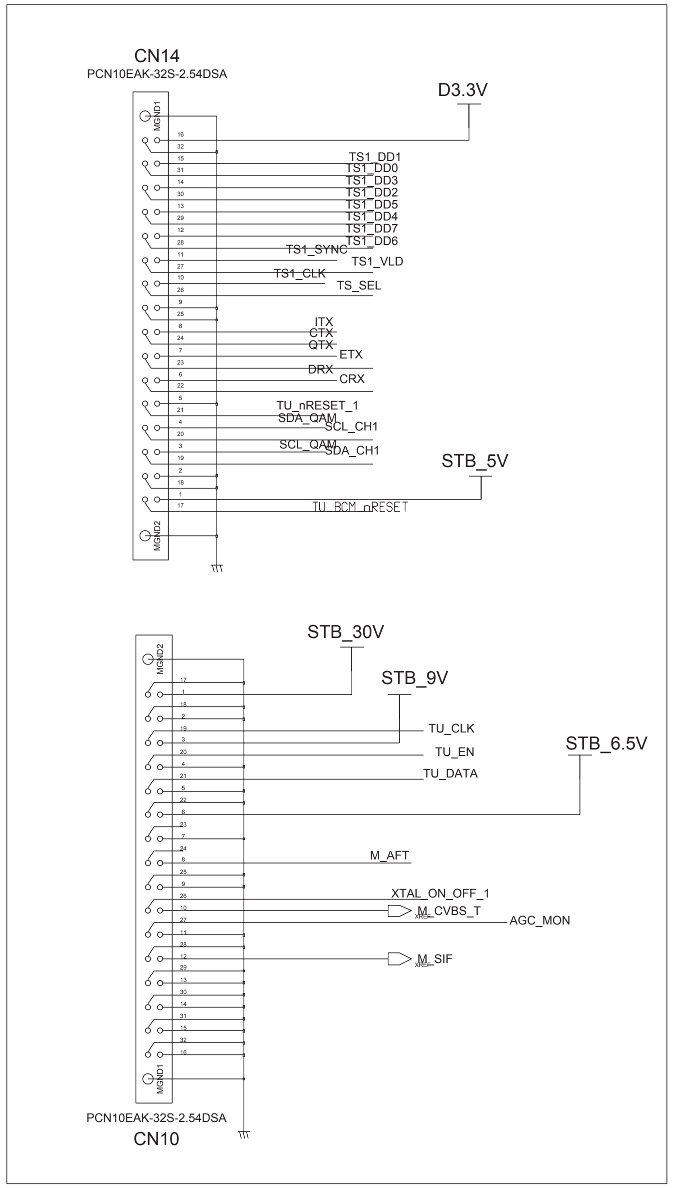
KOR Only - Alps NIM tuner


D3.3V
TU_5V
TU_33V
TUNER_1
CH2.5V_1
CH1.25V_1
C113 10nF 50V MO
C114 100nF 16V MO
L22 MMZ2012R121A
C87 10nF 50V MO
C88 100nF 16V MO
C96 100uF 10V
M_CVBS_T
AGC_MON
M_SIF
M_AFT
TU_nRESET_1
XTAL_ON_OFF_1
L24 MMZ2012R121A
C97 100nF 50V
C98 10nF 50V MO
C93 1uF 50V
TS1_ERR
TS1_SYNC
TS1_VLD
TS1_DD7
TS1_DD6
TS1_DD5
TS1_DD4
TS1_DD3
TS1_DD2
TS1_DD1
TS1_DD0
TS1_CLK
SDA_CH1
SCL_CH1
RA20
RA21
R149
R147
R148
R170
R169
R182
R231
R271
C95 10nF 50V MO
C94 100nF 16V MO
C92 100uF 10V
C141 10nF 50V MO
C142 100nF 16V MO
C139 100uF 10V
TU1S

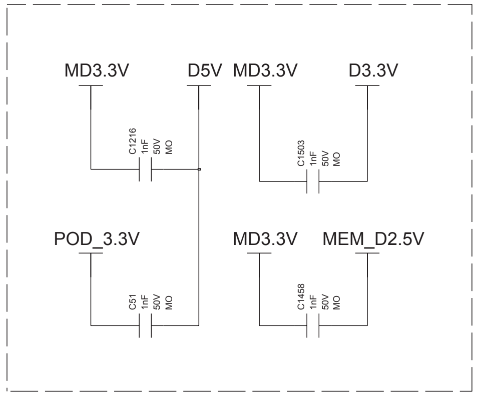

STB_5V
TU_5V
US/KOREA OPTION
L26 MMZ2012R121A
L27 MMZ2012R121A
US
KOR
R146 10K 1/16W
M_CVBS_T
R167 47 1/16W
R168 68ohm 1/10W
16V 22uF C143
R145 22Kohm 1/16W
Q5 KSC1623-G
R124 0 1/16W
R125 470 1/16W
M_CVBS
US/KOREA OPTION
KOREA DELETE

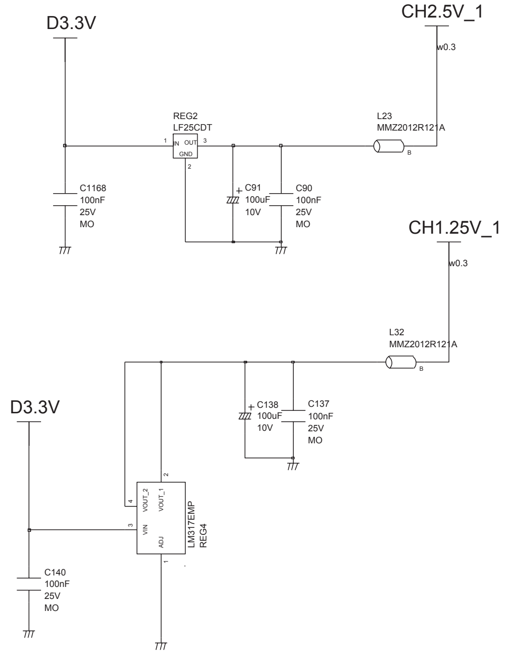

STB_9V
D9V
L1000
L1001
C16 10nF 50V MO
C15 50V 100nF
10uF 16V C1006
US/KOREA OPTION
US: L1001DELETE
KOREA: L1000 DELETE
CN3 SMW250-05 WH1
TU45 UMX-NT-042
R31 1K 1/16W
R30 2.2ohm 1/10W
LNA_ON_OFF
Q2
1K 1/16W
KSC1623-Y
R1105
C1094 1nF 50V MO
GT2
GT1
KOR
US
Very Closed to Splitter
R29 2.2ohm 1/10W
Q1
1K 1/16W
KSC1623-Y
R28
C14 1nF 50V MO

US Only - OOB channel board connector

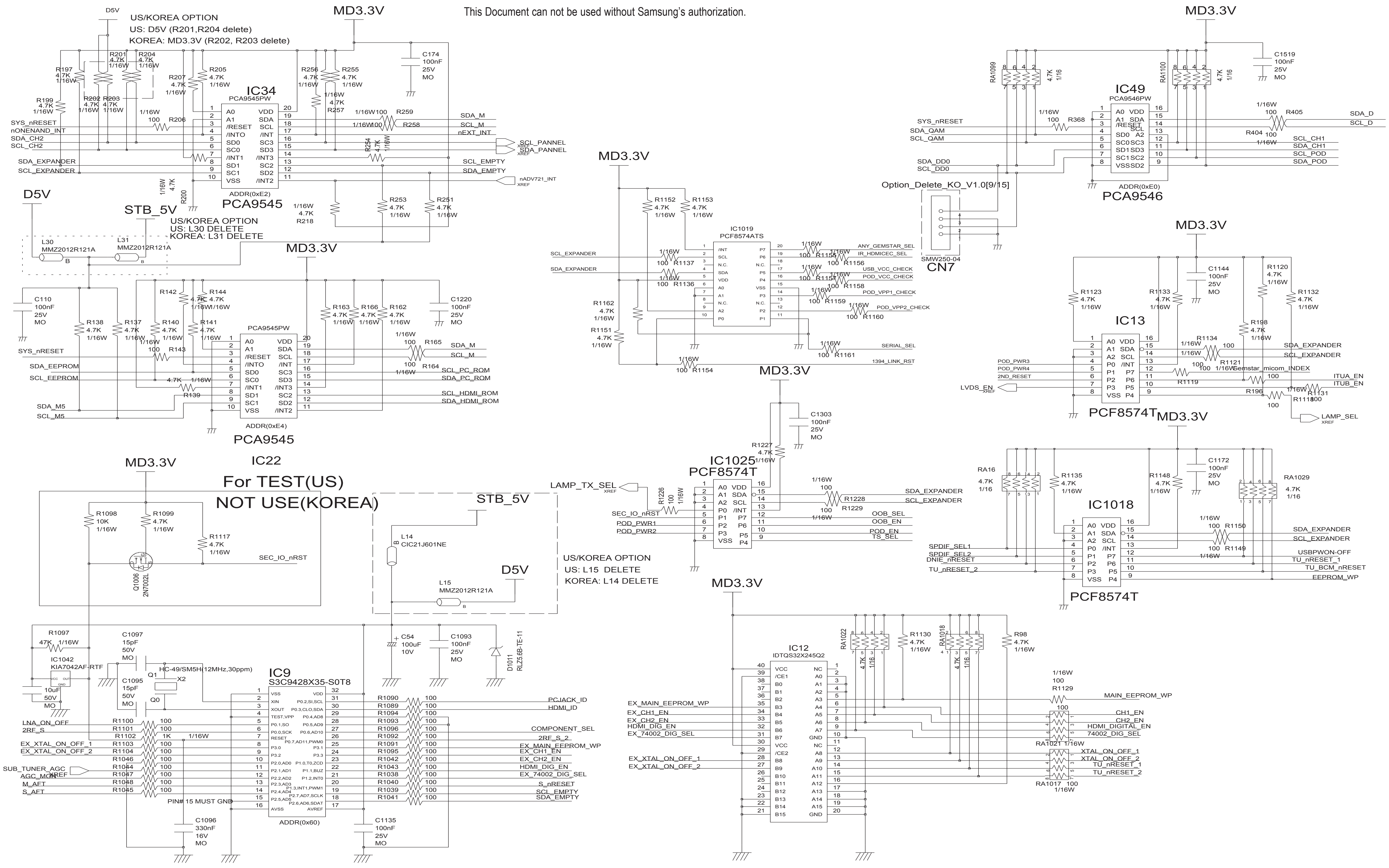

CN14
PCN10EAK-32S-2.54DSA
D3.3V
TS1_DD1
TS1_DD0
TS1_DD3
TS1_DD2
TS1_DD5
TS1_DD4
TS1_DD7
TS1_DD6
TS1_SYNC
TS1_VLD
TS1_CLK
TS_SEL
ITX
CTX
QTX
ETX
DRX
CRX
TU_nRESET_1
SDA_QAM
SCL_CH1
SCL_QAM
SDA_CH1
STB_5V
TU_BCM_nRESET
STB_30V
STB_9V
TU_CLK
TU_EN
TU_DATA
STB_6.5V
M_AFT
XTAL_ON_OFF_1
M_CVBS_T
AGC_MON
M_SIF
PCN10EAK-32S-2.54DSA
CN10

Stitch-Cap

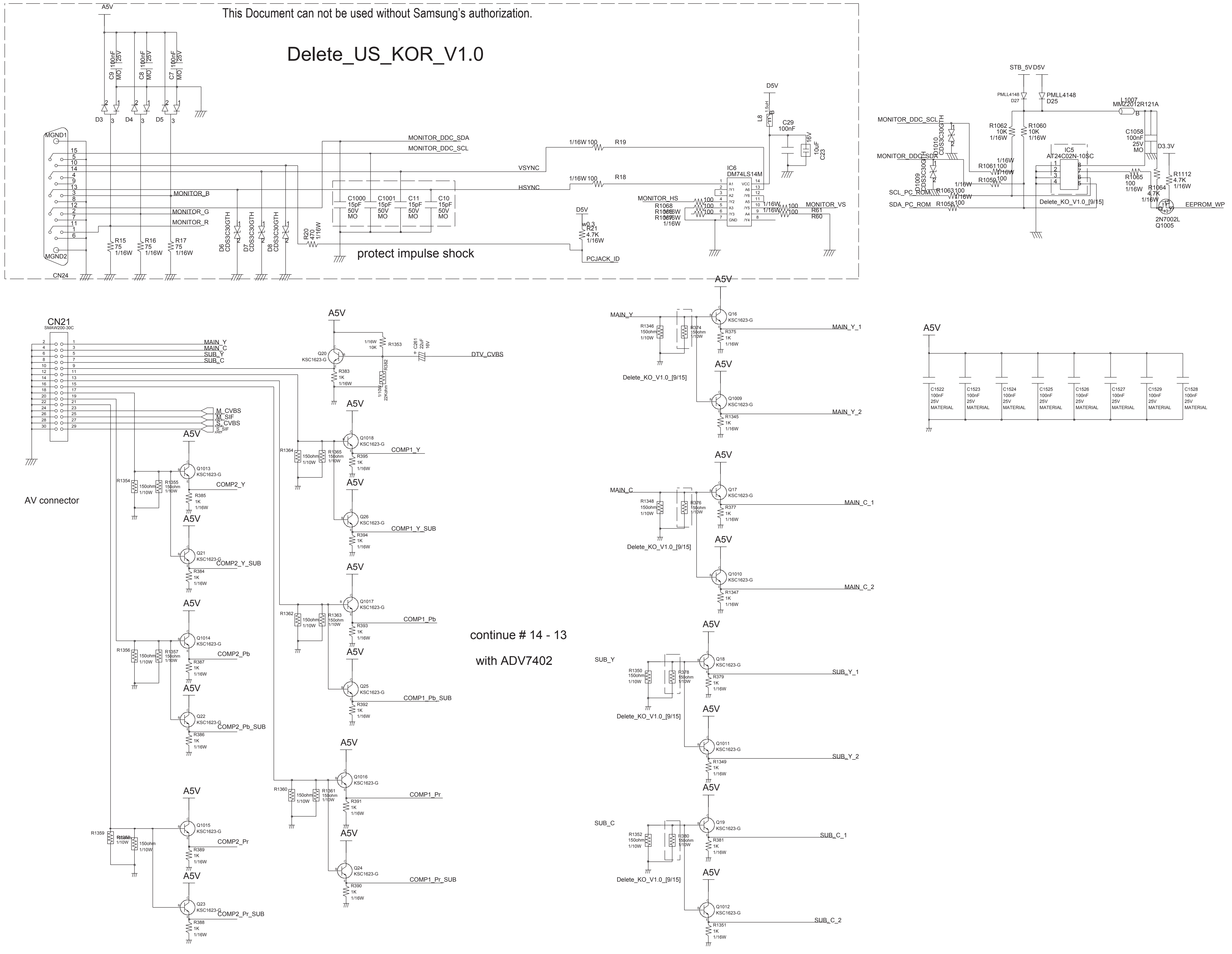

MD3.3V
D5V
MD3.3V
D3.3V
C1216 1nF 50V MO
C1503 1nF 50V MO
POD_3.3V
MD3.3V
MEM_D2.5V
C51 1nF 50V MO
C1488 1nF 50V MO


D3.3V
CH2.5V_1
REG2 LF25CDT
L23 MMZ2012R121A
C1168 100nF 25V MO
C91 100uF 10V
C90 100nF 25V MO
CH1.25V_1
L32 MMZ2012R121A
D3.3V
C138 100uF 10V
C137 100nF 25V MO
LM317EMP REG4
C140 100nF 25V MO

7-2-11 DTV Module-11

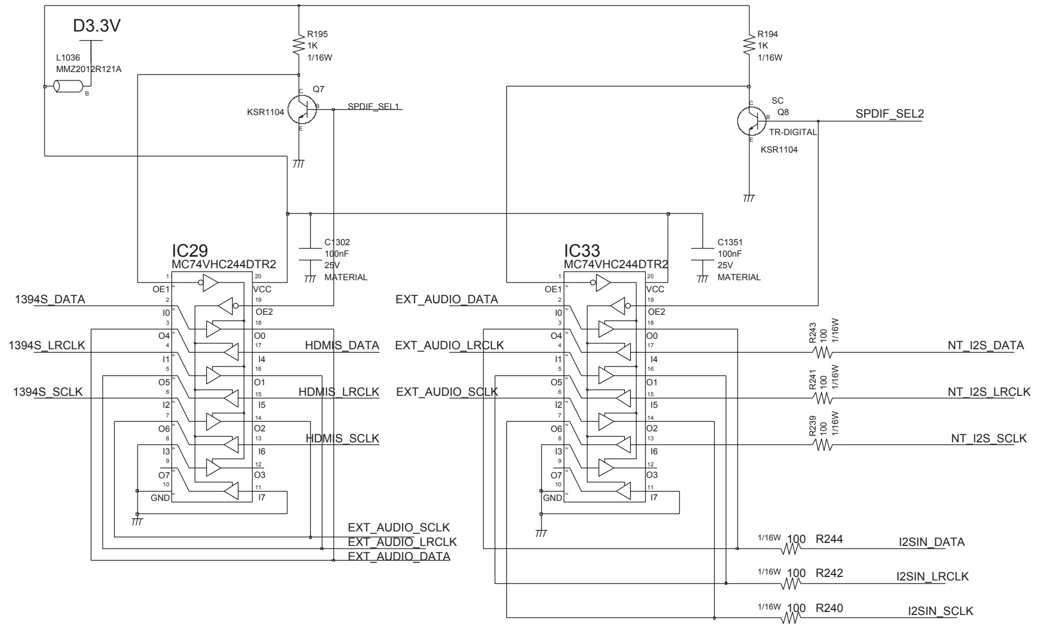

This Document can not be used without Samsung's authorization.
US/KOREA OPTION
US: D5V (R201,R204 delete)
KOREA: MD3.3V (R202, R203 delete)
MD3.3V
D5V
IC34
PCA9545PW
ADDR(0xE2)
PCA9545
SYS_nRESET
nONENAND_INT
SDA_CH2
SCL_CH2
SDA_EXPANDER
SCL_EXPANDER
SDA_M
SCL_M
nEXT_INT
SCL_PANNEL
SDA_PANNEL
SCL_EMPTY
SDA_EMPTY
nADV721_INT
STB_5V
US/KOREA OPTION
US: L30 DELETE
KOREA: L31 DELETE
L30 MMZ2012R121A
L31 MMZ2012R121A
SDA_EEPROM
SCL_EEPROM
SDA_M5
SCL_M5
SCL_PC_ROM
SDA_PC_ROM
SCL_HDMI_ROM
SDA_HDMI_ROM
ADDR(0xE4)
IC22
For TEST(US)
NOT USE(KOREA)
SEC_IO_nRST
Q1006 2N7002L
L14 CIC21J601NE
L15 MMZ2012R121A
US/KOREA OPTION
US: L15 DELETE
KOREA: L14 DELETE
IC1042 KIA7042AF-RTF
HC-49/SM5H(12MHz,30ppm)
IC9
S3C9428X35-S0T8
ADDR(0x60)
PIN# 15 MUST GND
LNA_ON_OFF
2RF_S
EX_XTAL_ON_OFF_1
EX_XTAL_ON_OFF_2
SUB_TUNER_AGC
AGC_MON
M_AFT
S_AFT
PCJACK_ID
HDMI_ID
COMPONENT_SEL
2RF_S_2
EX_MAIN_EEPROM_WP
EX_CH1_EN
EX_CH2_EN
HDMI_DIG_EN
EX_74002_DIG_SEL
S_nRESET
D1011 RLZ5.6B-TE-11
IC1019
PCF8574ATS
ANY_GEMSTAR_SEL
IR_HDMICEC_SEL
USB_VCC_CHECK
POD_VCC_CHECK
POD_VPP1_CHECK
POD_VPP2_CHECK
SERIAL_SEL
1394_LINK_SEL
IC1025
PCF8574T
LAMP_TX_SEL
SEC_IO_nRST
POD_PWR1
POD_PWR2
OOB_SEL
OOB_EN
POD_EN
TS_SEL
IC12
IDTQS32X245Q2
MAIN_EEPROM_WP
CH1_EN
CH2_EN
HDMI_DIGITAL_EN
74002_DIG_SEL
XTAL_ON_OFF_1
XTAL_ON_OFF_2
TU_nRESET_1
TU_nRESET_2
IC49
PCA9546PW
ADDR(0xE0)
PCA9546
SDA_QAM
SCL_QAM
SDA_DD0
SCL_DD0
SDA_D
SCL_D
SCL_CH1
SDA_CH1
SCL_POD
SDA_POD
Option_Delete_KO_V1.0[9/15]
SMW250-04
CN7
IC13
PCF8574T
POD_PWR3
POD_PWR4
2ND_RESET
LVDS_EN
Gemstar_micom_INDEX
ITUA_EN
ITUB_EN
LAMP_SEL
IC1018
SPDIF_SEL1
SPDIF_SEL2
DNIE_nRESET
TU_nRESET_2
USBPWON-OFF
TU_nRESET_1
TU_BCM_nRESET
EEPROM_WP

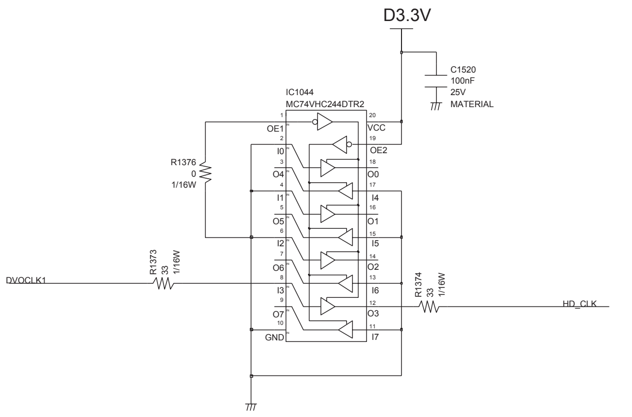
7-2-12 DTV Module-12

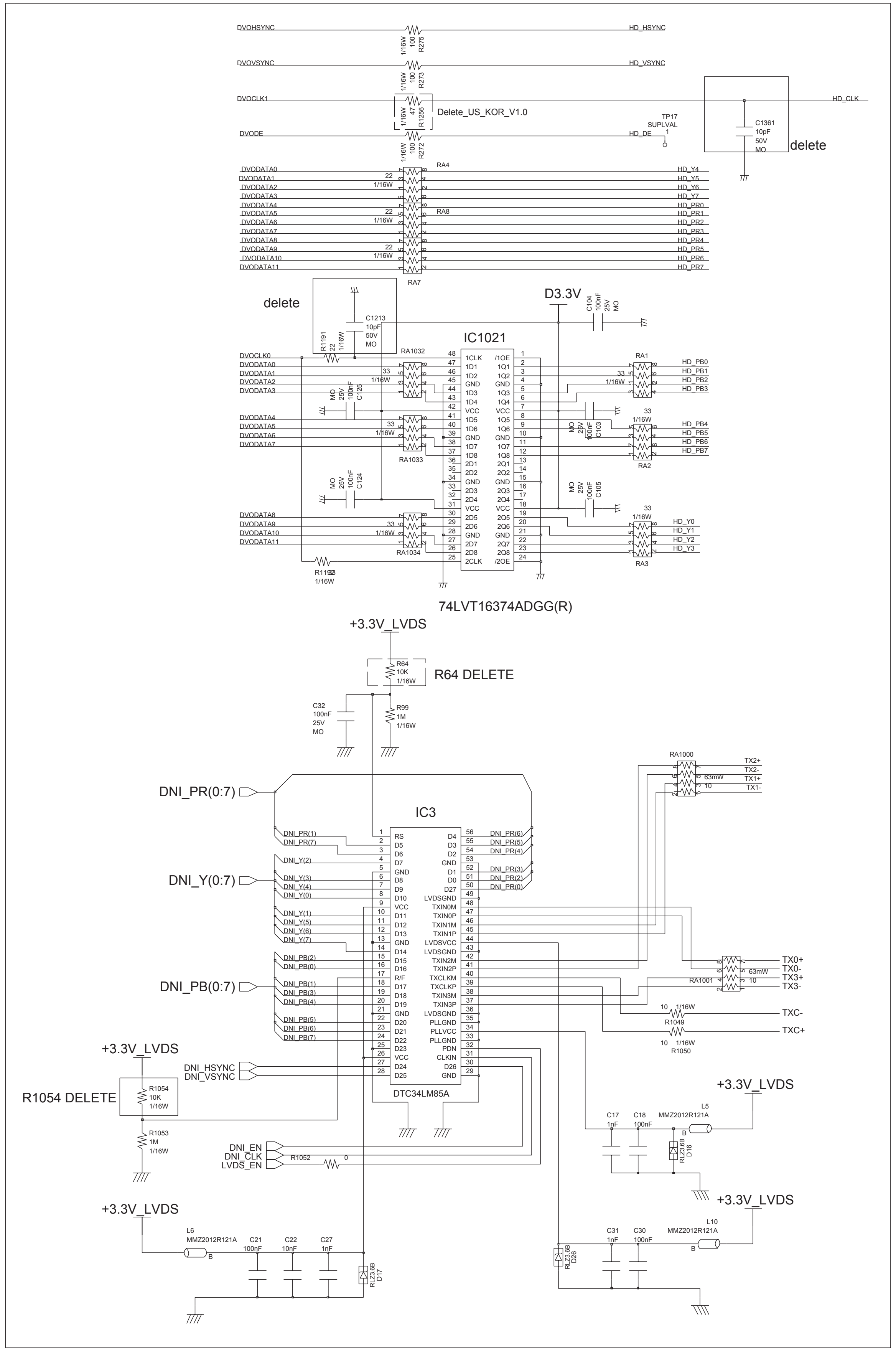

This Document can not be used without Samsung's authorization.
Delete_US_KOR_V1.0
A5V
D5V
C9 100nF 25V MO
C8 100nF 25V MO
C7 100nF 25V MO
D3
D4
D5
MGND1
MGND2
CN24
MONITOR_B
MONITOR_G
MONITOR_R
R15 75 1/16W
R16 75 1/16W
R17 75 1/16W
D6 CDS3C30GTH
D7 CDS3C30GTH
D8 CDS3C30GTH
R20 470 1/16W
MONITOR_DDC_SDA
MONITOR_DDC_SCL
VSYNC
HSYNC
C1000 15pF 50V MO
C1001 15pF 50V MO
C11 15pF 50V MO
C10 15pF 50V MO
protect impulse shock
R19
R18
1/16W 100
D5V
R21 4.7K 1/16W
PCJACK_ID
L8
C29 100nF
C23 10uF 16V
IC6 DM74LS14M
MONITOR_HS
R1068
R1066
R1067
MONITOR_VS
R61
R60
STB_5V
D27
D25 PMLL4148
L1007 MMZ2012R121A
C1058 100nF 25V MO
D3.3V
MONITOR_DDC_SCL
MONITOR_DDC_SDA
D1010 CDS3C30GTH
D1009 CDS3C30GTH
R1062 10K 1/16W
R1060 10K 1/16W
IC5 AT24C02N-10SC
R1061 100
R1059 100
R1063 100
R1058 100
SCL_PC_ROM
SDA_PC_ROM
R1065 100 1/16W
R1064 4.7K 1/16W
R1112 4.7K 1/16W
Q1005 2N7002L
EEPROM_WP
Delete_KO_V1.0_[9/15]
CN21 SMAW200-30C
MAIN_Y
MAIN_C
SUB_Y
SUB_C
M_CVBS
M_SIF
S_CVBS
S_SIF
AV connector
Q20 KSC1623-G
R1353
C281 22uF 16V
DTV_CVBS
R383 1K 1/16W
R382
Q1018 KSC1623-G
COMP1_Y
Q26 KSC1623-G
COMP1_Y_SUB
Q1013 KSC1623-G
COMP2_Y
Q21 KSC1623-G
COMP2_Y_SUB
Q1017 KSC1623-G
COMP1_Pb
Q25 KSC1623-G
COMP1_Pb_SUB
Q1014 KSC1623-G
COMP2_Pb
Q22 KSC1623-G
COMP2_Pb_SUB
Q1016 KSC1623-G
COMP1_Pr
Q24 KSC1623-G
COMP1_Pr_SUB
Q1015 KSC1623-G
COMP2_Pr
Q23 KSC1623-G
COMP2_Pr_SUB
continue # 14 - 13
with ADV7402
Q16 KSC1623-G
MAIN_Y_1
Q1009 KSC1623-G
MAIN_Y_2
Q17 KSC1623-G
MAIN_C_1
Q1010 KSC1623-G
MAIN_C_2
SUB_Y
Q18 KSC1623-G
SUB_Y_1
Q1011 KSC1623-G
SUB_Y_2
SUB_C
Q19 KSC1623-G
SUB_C_1
Q1012 KSC1623-G
SUB_C_2
C1522 100nF 25V MATERIAL
C1523 100nF 25V MATERIAL
C1524 100nF 25V MATERIAL
C1525 100nF 25V MATERIAL
C1526 100nF 25V MATERIAL
C1527 100nF 25V MATERIAL
C1529 100nF 25V MATERIAL
C1528 100nF 25V MATERIAL

7-2-13 DTV Module-13

This Document can not be used without Samsung's authorization.

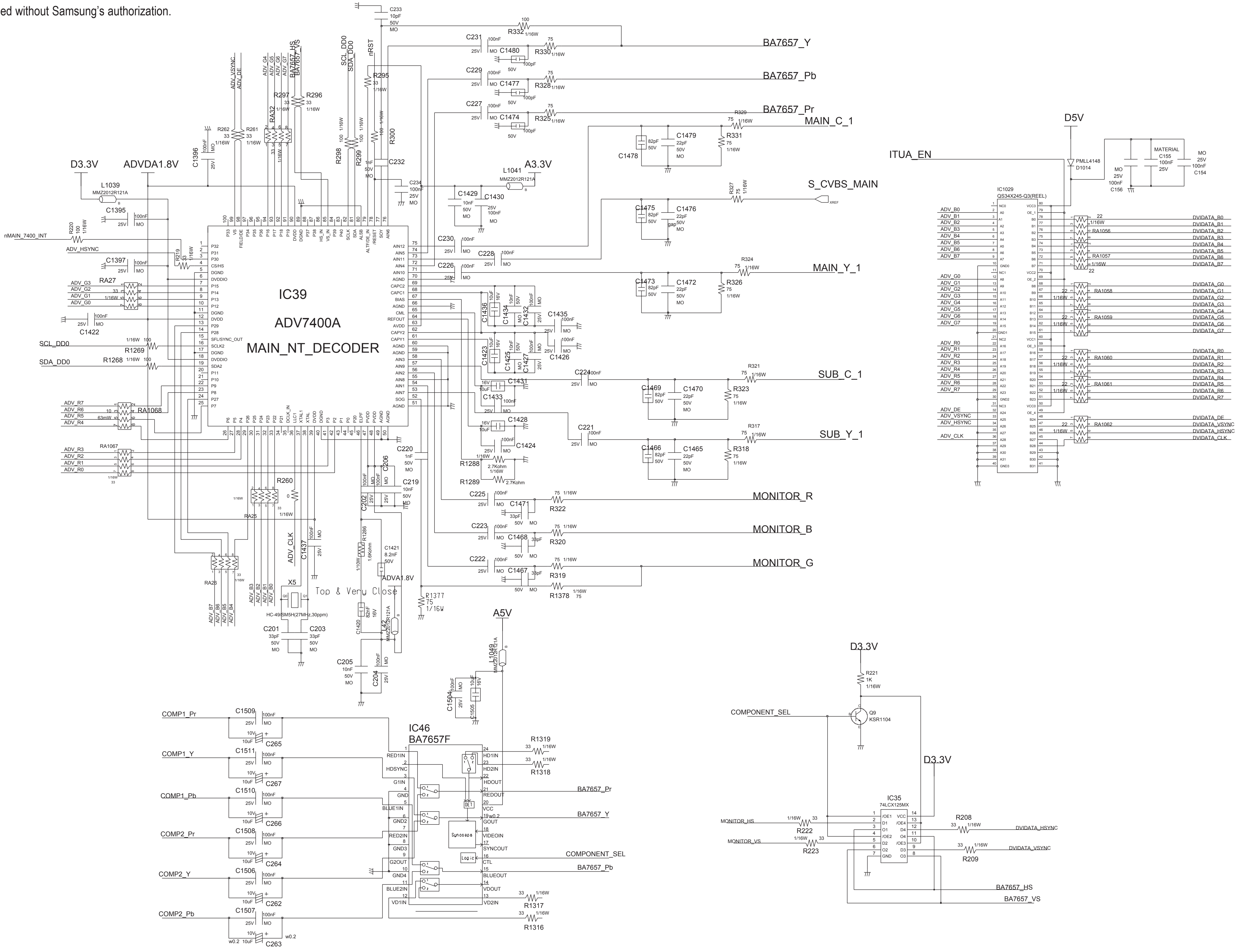

D3.3V
L1036
MMZ2012R121A
R195
1K
1/16W
Q7
KSR1104
SPDIF_SEL1
R194
1K
1/16W
SC
Q8
TR-DIGITAL
KSR1104
SPDIF_SEL2
C1302
100nF
25V
MATERIAL
C1351
100nF
25V
MATERIAL
IC29
MC74VHC244DTR2
IC33
MC74VHC244DTR2
1394S_DATA
1394S_LRCLK
1394S_SCLK
HDMIS_DATA
HDMIS_LRCLK
HDMIS_SCLK
EXT_AUDIO_DATA
EXT_AUDIO_LRCLK
EXT_AUDIO_SCLK
R243
R241
R239
NT_I2S_DATA
NT_I2S_LRCLK
NT_I2S_SCLK
EXT_AUDIO_SCLK
EXT_AUDIO_LRCLK
EXT_AUDIO_DATA
R244
R242
R240
I2SIN_DATA
I2SIN_LRCLK
I2SIN_SCLK


D3.3V
C1520
100nF
25V
MATERIAL
IC1044
MC74VHC244DTR2
R1376
0
1/16W
R1373
33
1/16W
DVOCLK1
R1374
33
1/16W
HD_CLK


DVOHSYNC
HD_HSYNC
R275
DVOVSYNC
HD_VSYNC
R273
DVOCLK1
HD_CLK
R1256
Delete_US_KOR_V1.0
TP17
SUPLVAL
C1361
10pF
50V
MO
delete
DVODE
HD_DE
R272
RA4
RA8
RA7
DVODATA0
DVODATA11
HD_Y4
HD_PR7
delete
C1213
10pF
50V
MO
R1191
D3.3V
IC1021
RA1032
RA1033
RA1034
RA1
RA2
RA3
HD_PB0
HD_PB7
HD_Y0
HD_Y3
R1193
74LVT16374ADGG(R)
+3.3V_LVDS
R64
10K
1/16W
R64 DELETE
R99
1M
1/16W
C32
100nF
25V
MO
DNI_PR(0:7)
DNI_Y(0:7)
DNI_PB(0:7)
IC3
DTC34LM85A
RA1000
TX2+
TX2-
TX1+
TX1-
RA1001
TX0+
TX0-
TX3+
TX3-
R1049
TXC-
TXC+
R1050
+3.3V_LVDS
DNI_HSYNC
DNI_VSYNC
R1054 DELETE
R1054
10K
1/16W
R1053
1M
1/16W
DNI_EN
DNI_CLK
LVDS_EN
R1052
+3.3V_LVDS
C17
1nF
C18
100nF
L5
MMZ2012R121A
D16
+3.3V_LVDS
L6
MMZ2012R121A
C21
100nF
C22
10nF
C27
1nF
D17
D26
+3.3V_LVDS
C31
1nF
C30
100nF
L10
MMZ2012R121A

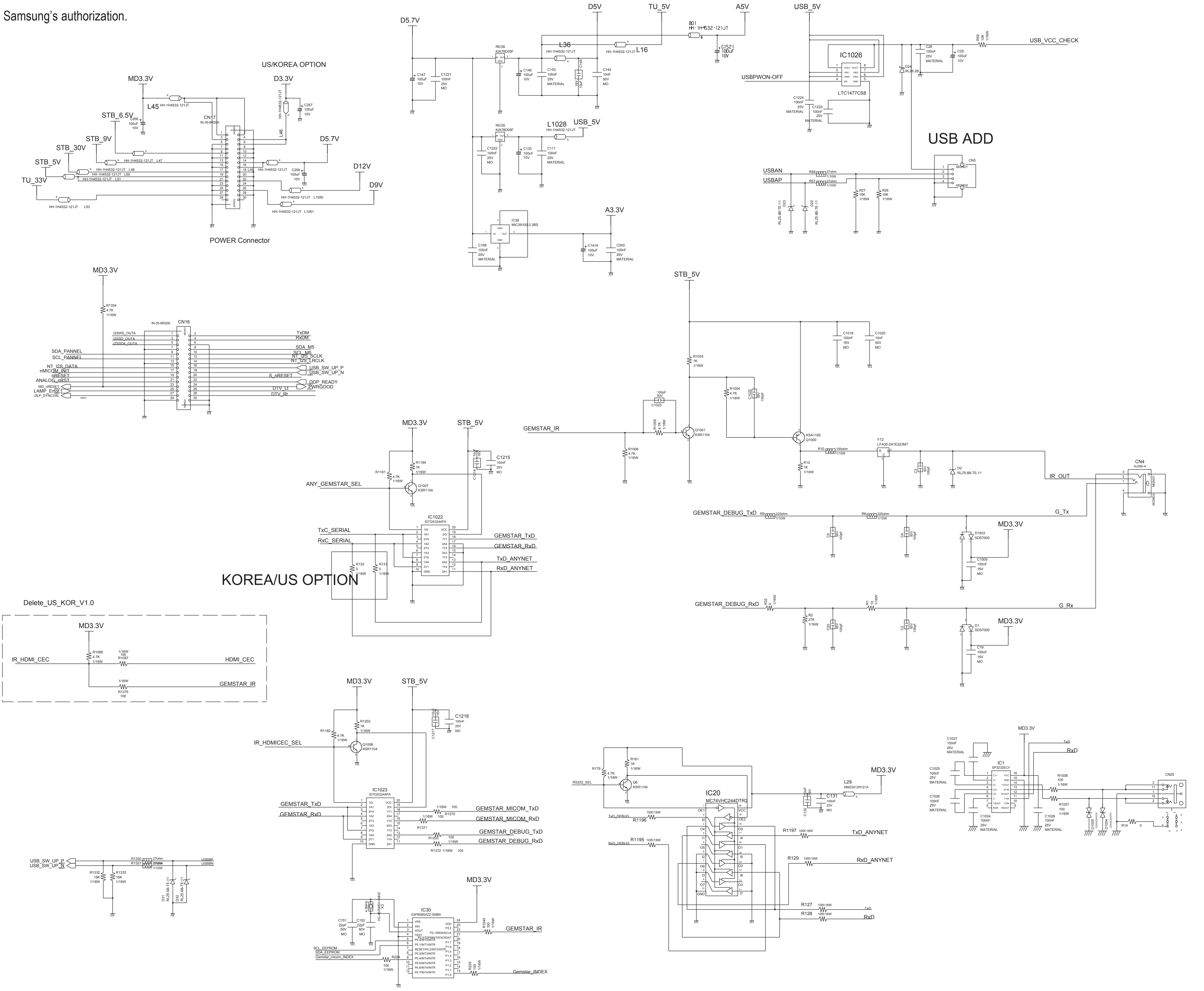
7-2-14 DTV Module-14

This Document can not be used without Samsung's authorization.


IC39
ADV7400A
MAIN_NT_DECODER
D3.3V
ADVDA1.8V
A3.3V
A5V
D5V
L1039
L1041
nMAIN_7400_INT
ADV_HSYNC
SCL_DD0
SDA_DD0
R1269
R1268
RA27
RA1068
RA1067
RA25
R260
X5
HC-49/SM5H(27MHz,30ppm)
C201
C203
C205
ADV_CLK
ADVA1.8V
Top & Very Close
R1377
BA7657_Y
BA7657_Pb
BA7657_Pr
MAIN_C_1
S_CVBS_MAIN
MAIN_Y_1
SUB_C_1
SUB_Y_1
MONITOR_R
MONITOR_B
MONITOR_G
ITUA_EN
IC1029
QS34X245-Q3(REEL)
PMLL4148
D1014
DVIDATA_B0
DVIDATA_G0
DVIDATA_R0
DVIDATA_DE
DVIDATA_VSYNC
DVIDATA_HSYNC
DVIDATA_CLK
IC46
BA7657F
COMP1_Pr
COMP1_Y
COMP1_Pb
COMP2_Pr
COMP2_Y
COMP2_Pb
COMPONENT_SEL
Q9
KSR1104
R221
IC35
74LCX125MX
MONITOR_HS
MONITOR_VS
R222
R223
R208
R209
DVIDATA_HSYNC
DVIDATA_VSYNC
BA7657_HS
BA7657_VS
R1319
R1318
R1317
R1316

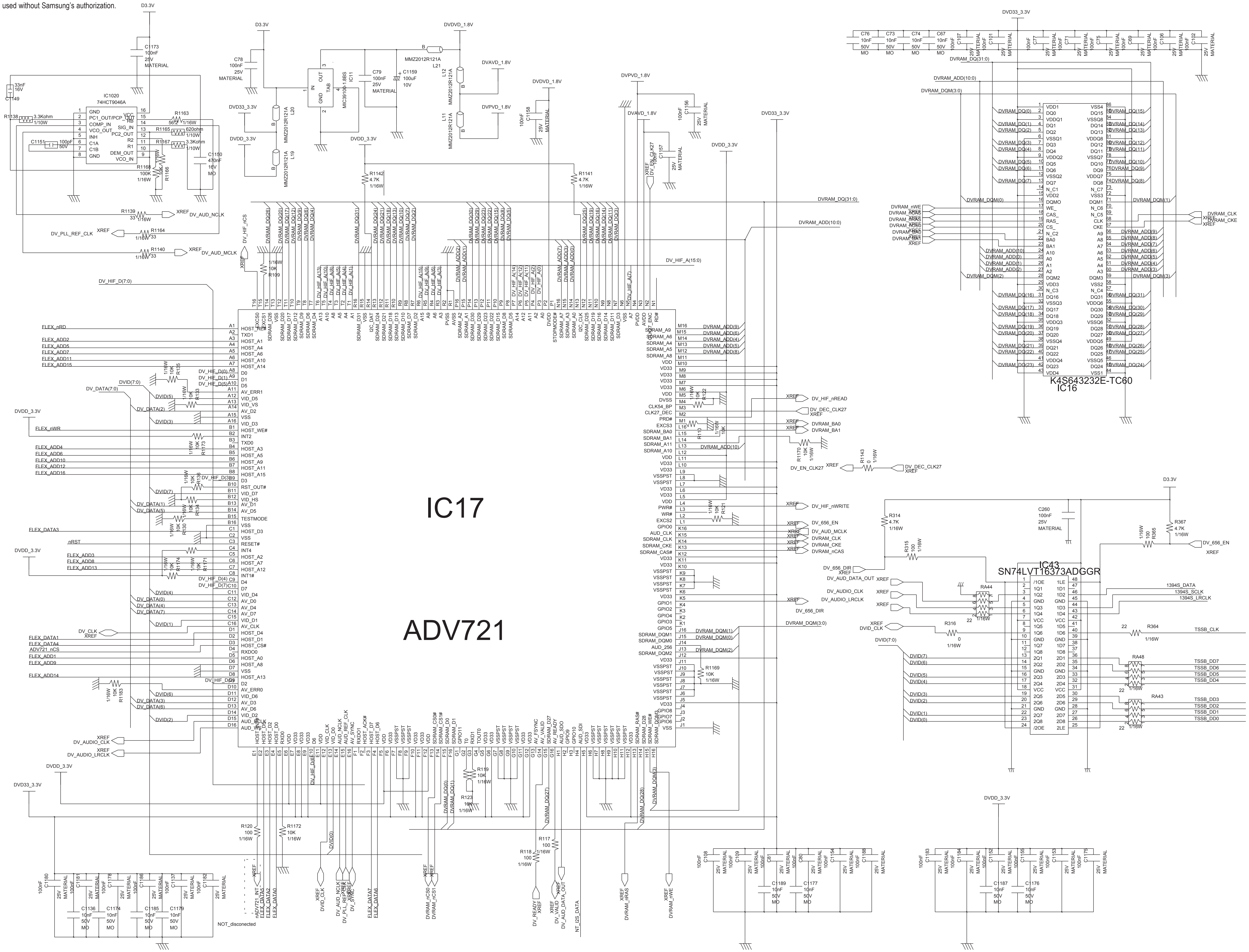
7-2-15 DTV Module-15

This Document can not be used without Samsung's authorization.


US/KOREA OPTION
MD3.3V
D3.3V
STB_6.5V
STB_9V
STB_30V
STB_5V
TU_33V
L45
CN17
L46
D5.7V
D12V
D9V
POWER Connector
D5.7V
D5V
TU_5V
A5V
USB_5V
REG6
L36
L16
C152
IC1026
LTC1477CS8
USBPWON-OFF
USB_VCC_CHECK
L1028
IC38
A3.3V
USB ADD
CN5
USBAN
USBAP
MD3.3V
CN16
TxDM
RxDM
SDA_PANNEL
SCL_PANNEL
SDA_M5
SCL_M5
NT_I2S_SCLK
NT_I2S_LRCLK
NT_I2S_DATA
nMICOM_INIT
nRESET
ANALOG_nRST
USB_SW_UP_P
USB_SW_UP_N
S_nRESET
DDP_READY
PWRGOOD
LAMP_EN
DLP_SYNCVAL
DTV_Lt
DTV_Rt
STB_5V
GEMSTAR_IR
Q1001
KSR1104
Q1000
KSA1182
FT2
CN4
IR_OUT
MD3.3V
STB_5V
ANY_GEMSTAR_SEL
Q1007
KSR1104
IC1022
IDTQS3244PA
TxC_SERIAL
RxC_SERIAL
GEMSTAR_TxD
GEMSTAR_RxD
TxD_ANYNET
RxD_ANYNET
KOREA/US OPTION
GEMSTAR_DEBUG_TxD
G_Tx
GEMSTAR_DEBUG_RxD
G_Rx
D1003
SDS7000
D1
SDS7000
Delete_US_KOR_V1.0
IR_HDMI_CEC
HDMI_CEC
GEMSTAR_IR
MD3.3V
STB_5V
IR_HDMICEC_SEL
Q1008
KSR1104
IC1023
IDTQS3244PA
GEMSTAR_MICOM_TxD
GEMSTAR_MICOM_RxD
GEMSTAR_DEBUG_TxD
GEMSTAR_DEBUG_RxD
RS232_SEL
Q6
KSR1104
L29
IC20
MC74VHC244DTR2
TxD_DEBUG
RxD_DEBUG
R1197
TxD_ANYNET
R129
RxD_ANYNET
R127
R128
TxD
RxD
MD3.3V
IC1
SP3232ECY
CN25
USB_SW_UP_P
USB_SW_UP_N
USBBP
USBBN
MD3.3V
IC30
GEMSTAR_IR
SCL_EEPROM
SDA_EEPROM
Gemstar_micom_INDEX
Gemstar_INDEX

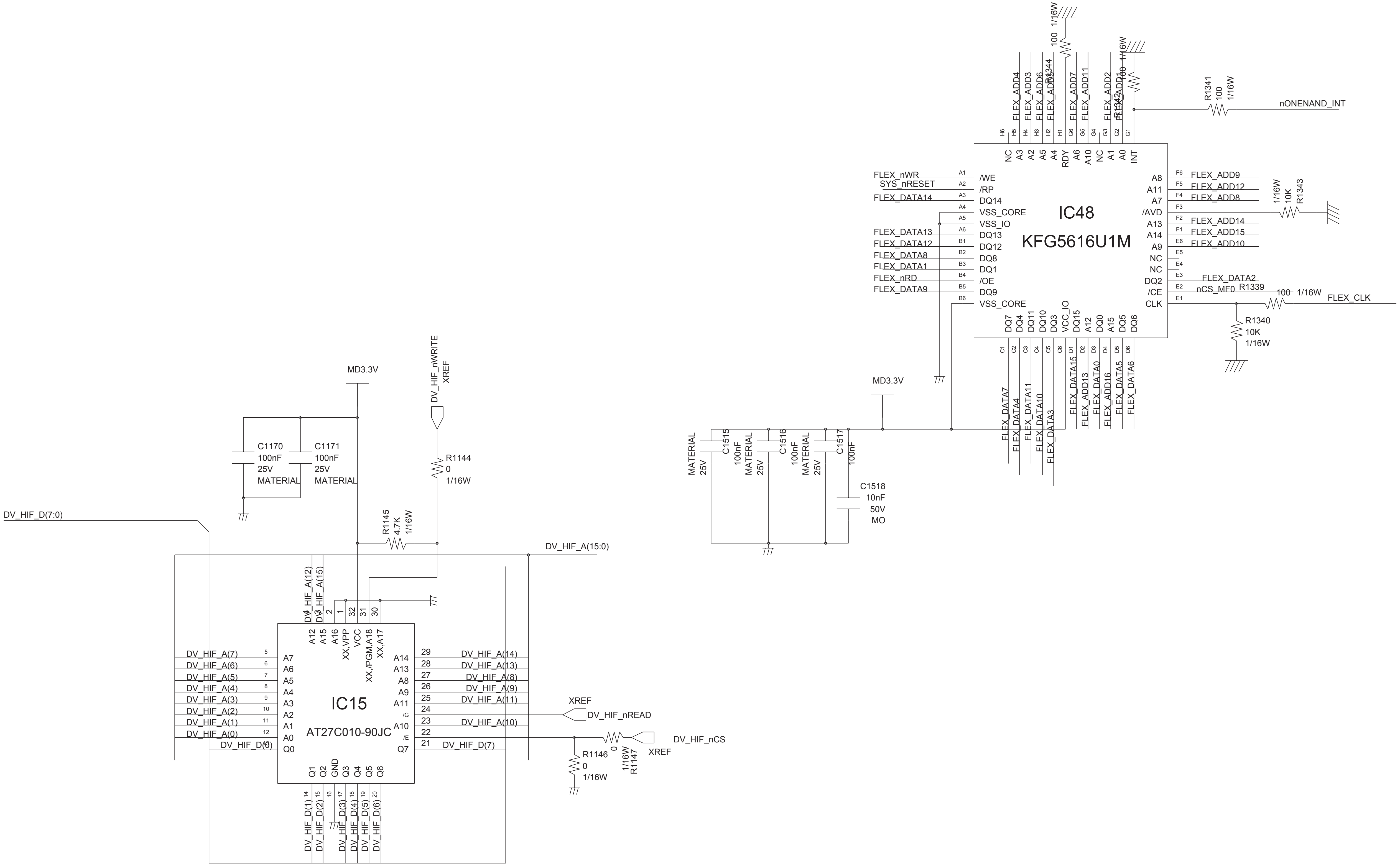
7-2-16 DTV Module-16

This Document can not be used without Samsung's authorization.


IC17
ADV721
K4S643232E-TC60
IC16
IC43
SN74LVT16373ADGGR
IC1020
74HCT9046A
IC11
MIC39100-1.8BS
D3.3V
DVDD_3.3V
DVD33_3.3V
DVDVD_1.8V
DVAVD_1.8V
DVPVD_1.8V
DVPVD_1.8V
MMZ2012R121A
L19
L20
L21
L11
L12
DVRAM_DQ(31:0)
DVRAM_ADD(10:0)
DVRAM_DQM(3:0)
DV_HIF_A(15:0)
DV_HIF_D(7:0)
DV_DATA(7:0)
DVID(7:0)
DV_AUD_NCLK
DV_AUD_MCLK
DV_PLL_REF_CLK
DV_HIF_nREAD
DV_DEC_CLK27
DV_EN_CLK27
DV_HIF_nWRITE
DV_656_EN
DV_656_DIR
DV_AUD_DATA_OUT
DV_AUDIO_CLK
DV_AUDIO_LRCLK
DVRAM_BA0
DVRAM_BA1
DVRAM_CLK
DVRAM_CKE
DVRAM_nCAS
DVRAM_nRAS
DVRAM_nWE
DVRAM_nCS0
DVRAM_nCS1
DVID_CLK
DV_CLK
DV_READY
DV_SYNC
NT_I2S_DATA
1394S_DATA
1394S_SCLK
1394S_LRCLK
TSSB_CLK
TSSB_DD7
TSSB_DD6
TSSB_DD5
TSSB_DD4
TSSB_DD3
TSSB_DD2
TSSB_DD1
TSSB_DD0
RA43
RA44
RA48
XREF
NOT_disconected

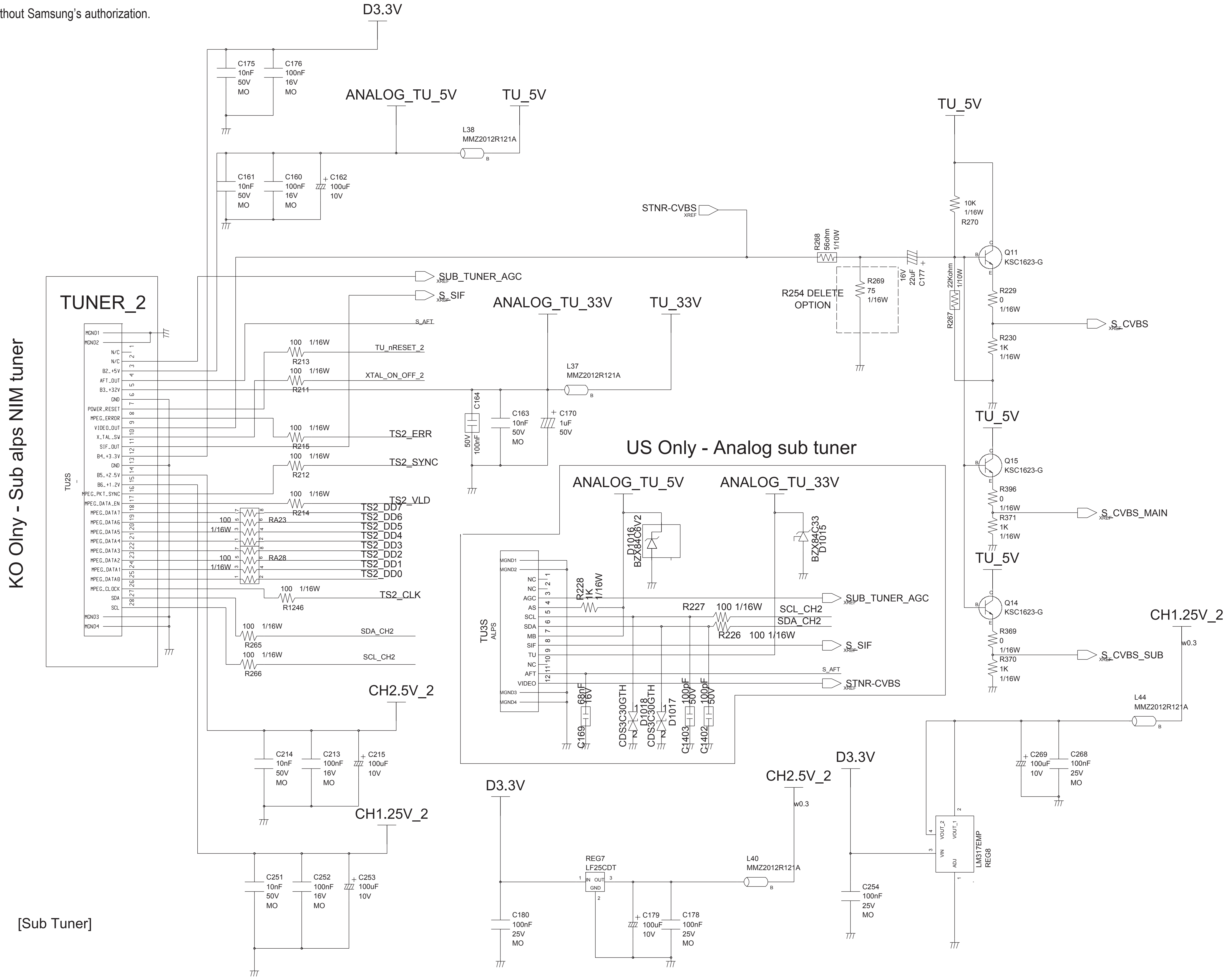
7-2-17 DTV Module-17

This Document can not be used without Samsung's authorization.


IC48
KFG5616U1M
NC
A3
A2
A5
A4
RDY
A6
A10
NC
A1
A0
INT
/WE
/RP
DQ14
VSS_CORE
VSS_IO
DQ13
DQ12
DQ8
DQ1
/OE
DQ9
VSS_CORE
A8
A11
A7
/AVD
A13
A14
A9
NC
NC
DQ2
/CE
CLK
DQ7
DQ4
DQ11
DQ10
DQ3
VCC_IO
DQ15
A12
DQ0
A15
DQ5
DQ6
FLEX_nWR
SYS_nRESET
FLEX_DATA14
FLEX_DATA13
FLEX_DATA12
FLEX_DATA8
FLEX_DATA1
FLEX_nRD
FLEX_DATA9
FLEX_ADD4
FLEX_ADD3
FLEX_ADD6
FLEX_ADD5
FLEX_ADD7
FLEX_ADD11
FLEX_ADD2
FLEX_ADD1
R1344
100
1/16W
R1342
100
1/16W
R1341
100
1/16W
nONENAND_INT
FLEX_ADD9
FLEX_ADD12
FLEX_ADD8
FLEX_ADD14
FLEX_ADD15
FLEX_ADD10
1/16W
10K
R1343
FLEX_DATA2
nCS_MF0
R1339
100
1/16W
FLEX_CLK
R1340
10K
1/16W
FLEX_DATA7
FLEX_DATA4
FLEX_DATA11
FLEX_DATA10
FLEX_DATA3
FLEX_DATA15
FLEX_ADD13
FLEX_DATA0
FLEX_ADD16
FLEX_DATA5
FLEX_DATA6
MD3.3V
C1515
100nF
MATERIAL
25V
C1516
100nF
MATERIAL
25V
C1517
100nF
MATERIAL
25V
C1518
10nF
50V
MO
MD3.3V
C1170
100nF
25V
MATERIAL
C1171
100nF
25V
MATERIAL
DV_HIF_nWRITE
XREF
R1144
0
1/16W
R1145
4.7K
1/16W
DV_HIF_D(7:0)
DV_HIF_A(15:0)
DV_HIF_A(12)
DV_HIF_A(15)
IC15
AT27C010-90JC
A12
A15
A16
XX,VPP
VCC
XX,/PGM,A18
XX,A17
A7
A6
A5
A4
A3
A2
A1
A0
Q0
A14
A13
A8
A9
A11
/G
A10
/E
Q7
Q1
Q2
GND
Q3
Q4
Q5
Q6
DV_HIF_A(7)
DV_HIF_A(6)
DV_HIF_A(5)
DV_HIF_A(4)
DV_HIF_A(3)
DV_HIF_A(2)
DV_HIF_A(1)
DV_HIF_A(0)
DV_HIF_D(0)
DV_HIF_A(14)
DV_HIF_A(13)
DV_HIF_A(8)
DV_HIF_A(9)
DV_HIF_A(11)
DV_HIF_A(10)
DV_HIF_D(7)
XREF
DV_HIF_nREAD
DV_HIF_nCS
XREF
R1146
0
1/16W
R1147
0
1/16W
DV_HIF_D(1)
DV_HIF_D(2)
DV_HIF_D(3)
DV_HIF_D(4)
DV_HIF_D(5)
DV_HIF_D(6)

7-2-18 DTV Module-18

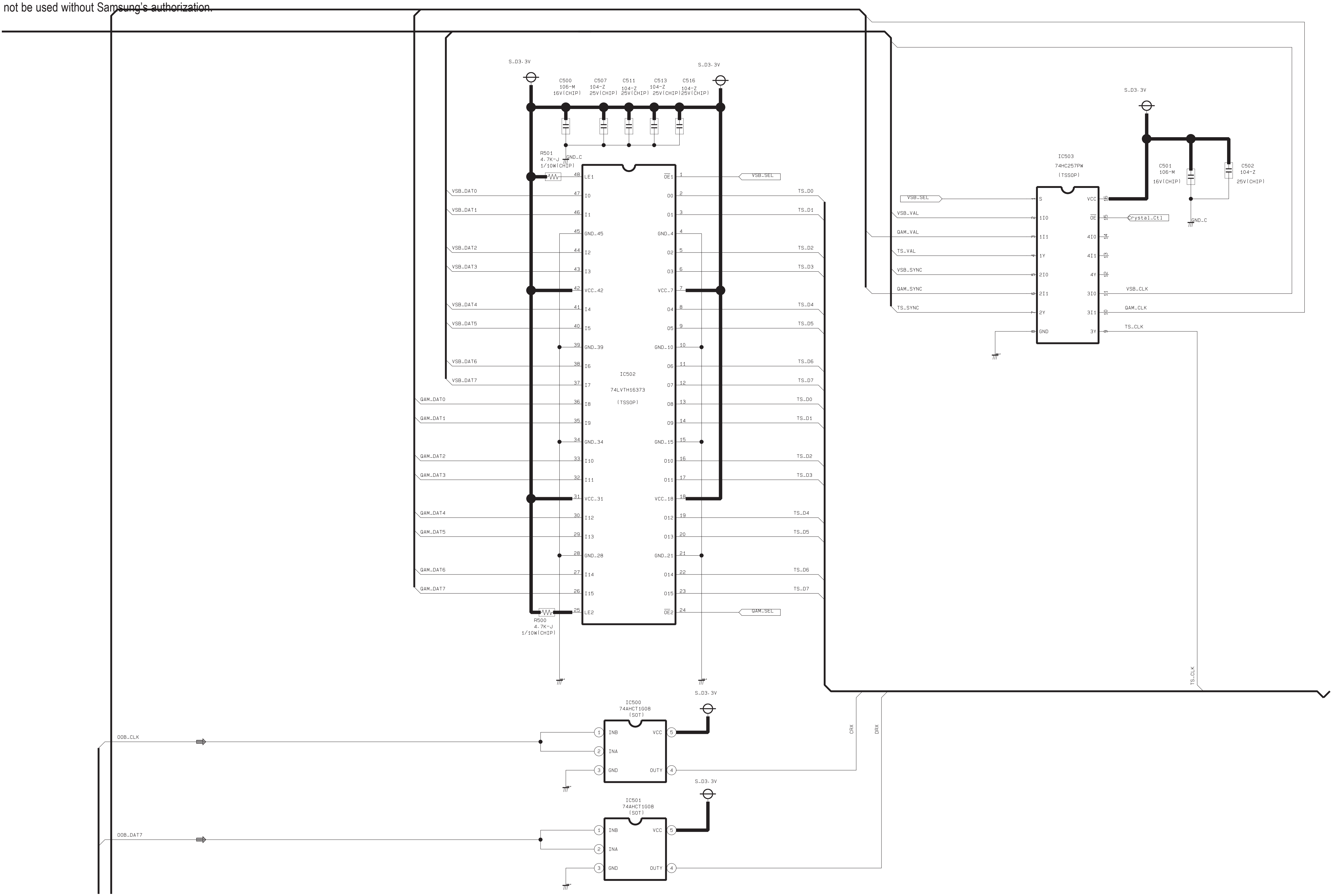
This Document can not be used without Samsung's authorization.


D3.3V
C175 10nF 50V MO
C176 100nF 16V MO
ANALOG_TU_5V
TU_5V
L38 MMZ2012R121A
C161 10nF 50V MO
C160 100nF 16V MO
C162 100uF 10V
STNR-CVBS
R268 56ohm 1/10W
R269 75 1/16W
R254 DELETE OPTION
C177 22uF 16V
R267 22Kohm 1/10W
R270 10K 1/16W
Q11 KSC1623-G
R229 0 1/16W
S_CVBS
R230 1K 1/16W
SUB_TUNER_AGC
S_SIF
S_AFT
TUNER_2
ANALOG_TU_33V
TU_33V
KO Olny - Sub alps NIM tuner
TU2S
MGND1
MGND2
N/C
B2_+5V
AFT_OUT
B3_+32V
GND
POWER_RESET
MPEG_ERROR
VIDEO_OUT
X_TAL_SW
SIF_OUT
B4_+3.3V
B5_+2.5V
B6_+1.2V
MPEG_PKT_SYNC
MPEG_DATA_EN
MPEG_DATA7
MPEG_DATA6
MPEG_DATA5
MPEG_DATA4
MPEG_DATA3
MPEG_DATA2
MPEG_DATA1
MPEG_DATA0
MPEG_CLOCK
SDA
SCL
MGND3
MGND4
R213 100 1/16W
TU_nRESET_2
R211 100 1/16W
XTAL_ON_OFF_2
L37 MMZ2012R121A
C164 100nF 50V
C163 10nF 50V MO
C170 1uF 50V
R215 100 1/16W
TS2_ERR
R212 100 1/16W
TS2_SYNC
R214 100 1/16W
TS2_VLD
RA23 100 1/16W
RA28 100 1/16W
TS2_DD7
TS2_DD6
TS2_DD5
TS2_DD4
TS2_DD3
TS2_DD2
TS2_DD1
TS2_DD0
R1246 100 1/16W
TS2_CLK
R265 100 1/16W
SDA_CH2
R266 100 1/16W
SCL_CH2
US Only - Analog sub tuner
TU_5V
Q15 KSC1623-G
R396 0 1/16W
S_CVBS_MAIN
R371 1K 1/16W
TU_5V
Q14 KSC1623-G
R369 0 1/16W
S_CVBS_SUB
R370 1K 1/16W
CH1.25V_2
w0.3
L44 MMZ2012R121A
C269 100uF 10V
C268 100nF 25V MO
LM317EMP REG8
VIN VOUT_2 VOUT_1 ADJ
D1016 BZX84C6V2
BZX84C33 D1015
TU3S ALPS
NC AGC AS SCL SDA MB SIF TU NC AFT VIDEO
R228 1K 1/16W
R227 100 1/16W
R226 100 1/16W
SCL_CH2
SDA_CH2
SUB_TUNER_AGC
S_SIF
S_AFT
STNR-CVBS
C169 680nF 16V
CDS3C30GTH D1018
CDS3C30GTH D1017
C1403 100pF 50V
C1402 100pF 50V
CH2.5V_2
C214 10nF 50V MO
C213 100nF 16V MO
C215 100uF 10V
CH1.25V_2
C251 10nF 50V MO
C252 100nF 16V MO
C253 100uF 10V
[Sub Tuner]
D3.3V
C180 100nF 25V MO
REG7 LF25CDT
IN OUT GND
C179 100uF 10V
C178 100nF 25V MO
CH2.5V_2
w0.3
L40 MMZ2012R121A
D3.3V
C254 100nF 25V MO

7-3 Channel

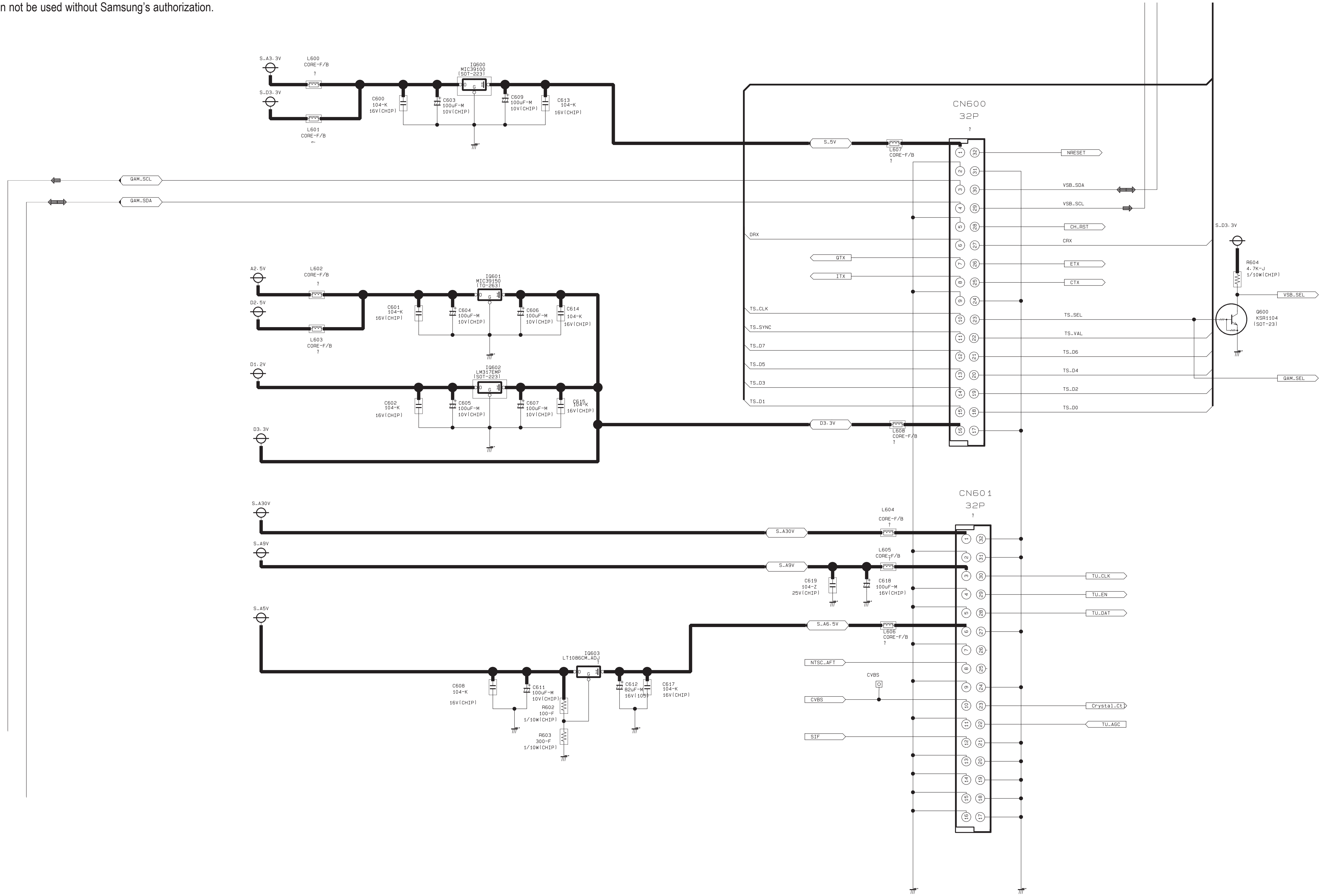
7-3-1 BUFFER

This Document can not be used without Samsung's authorization.


S_D3.3V
C500
106-M
16V(CHIP)
C507
104-Z
25V(CHIP)
C511
104-Z
25V(CHIP)
C513
104-Z
25V(CHIP)
C516
104-Z
25V(CHIP)
R501
4.7K-J
1/10W(CHIP)
GND_C
IC502
74LVTH16373
(TSSOP)
48 LE1
47 I0
46 I1
45 GND_45
44 I2
43 I3
42 VCC_42
41 I4
40 I5
39 GND_39
38 I6
37 I7
36 I8
35 I9
34 GND_34
33 I10
32 I11
31 VCC_31
30 I12
29 I13
28 GND_28
27 I14
26 I15
25 LE2
1 OE1
2 O0
3 O1
4 GND_4
5 O2
6 O3
7 VCC_7
8 O4
9 O5
10 GND_10
11 O6
12 O7
13 O8
14 O9
15 GND_15
16 O10
17 O11
18 VCC_18
19 O12
20 O13
21 GND_21
22 O14
23 O15
24 OE2
R500
4.7K-J
1/10W(CHIP)
VSB_SEL
QAM_SEL
VSB_DAT0
VSB_DAT1
VSB_DAT2
VSB_DAT3
VSB_DAT4
VSB_DAT5
VSB_DAT6
VSB_DAT7
QAM_DAT0
QAM_DAT1
QAM_DAT2
QAM_DAT3
QAM_DAT4
QAM_DAT5
QAM_DAT6
QAM_DAT7
TS_D0
TS_D1
TS_D2
TS_D3
TS_D4
TS_D5
TS_D6
TS_D7
IC503
74HC257PW
(TSSOP)
1 S
2 1I0
3 1I1
4 1Y
5 2I0
6 2I1
7 2Y
8 GND
16 VCC
15 OE
14 4I0
13 4I1
12 4Y
11 3I0
10 3I1
9 3Y
VSB_VAL
QAM_VAL
TS_VAL
VSB_SYNC
QAM_SYNC
TS_SYNC
VSB_CLK
QAM_CLK
TS_CLK
Crystal_Ctl
C501
106-M
16V(CHIP)
C502
104-Z
25V(CHIP)
IC500
74AHCT1G08
(SOT)
IC501
74AHCT1G08
(SOT)
1 INB
2 INA
3 GND
5 VCC
4 OUTY
OOB_CLK
OOB_DAT7
CRX
DRX

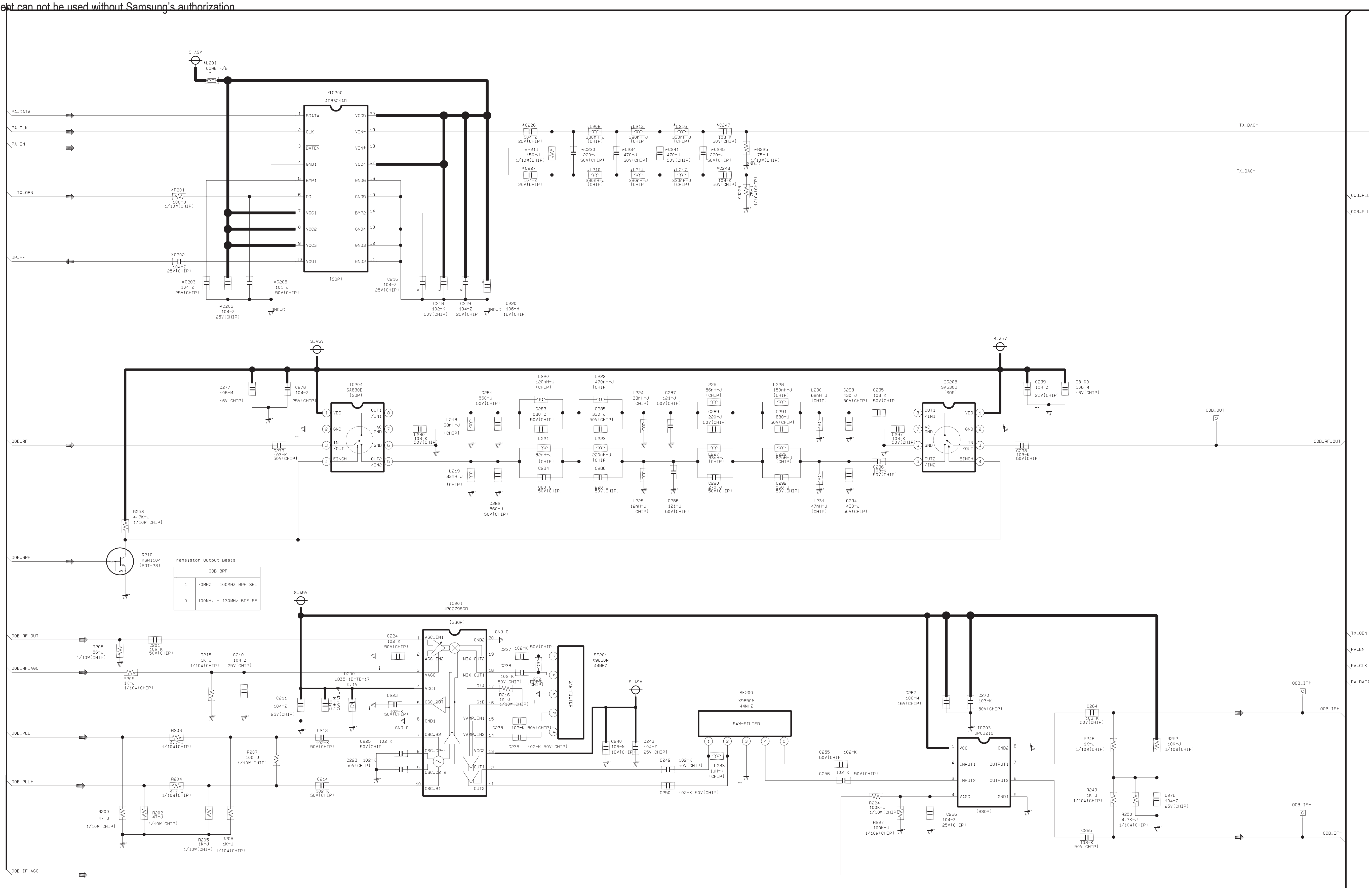
7-3-2 CONNECTOR

This Document can not be used without Samsung's authorization.


S_A3.3V
S_D3.3V
L600
CORE-F/B
L601
CORE-F/B
IQ600
MIC39100
(SOT-223)
C600
104-K
16V(CHIP)
C603
100uF-M
10V(CHIP)
C609
100uF-M
10V(CHIP)
C613
104-K
16V(CHIP)
QAM_SCL
QAM_SDA
A2.5V
D2.5V
L602
CORE-F/B
L603
CORE-F/B
IQ601
MIC39150
(TO-263)
C601
104-K
16V(CHIP)
C604
100uF-M
10V(CHIP)
C606
100uF-M
10V(CHIP)
C614
104-K
16V(CHIP)
D1.2V
IQ602
LM317EMP
(SOT-223)
C602
104-K
16V(CHIP)
C605
100uF-M
10V(CHIP)
C607
100uF-M
10V(CHIP)
C615
104-K
16V(CHIP)
D3.3V
CN600
32P
S_5V
L607
CORE-F/B
NRESET
VSB_SDA
VSB_SCL
CH_RST
DRX
CRX
QTX
ETX
ITX
CTX
TS_CLK
TS_SEL
TS_SYNC
TS_VAL
TS_D7
TS_D6
TS_D5
TS_D4
TS_D3
TS_D2
TS_D1
TS_D0
D3.3V
L608
CORE-F/B
S_D3.3V
R604
4.7K-J
1/10W(CHIP)
VSB_SEL
Q600
KSR1104
(SOT-23)
QAM_SEL
CN601
32P
S_A30V
L604
CORE-F/B
S_A9V
L605
CORE-F/B
C619
104-Z
25V(CHIP)
C618
100uF-M
16V(CHIP)
TU_CLK
TU_EN
TU_DAT
S_A5V
S_A6.5V
L606
CORE-F/B
NTSC_AFT
CVBS
CVBS
SIF
Crystal_Ct
TU_AGC
IQ603
LT1086CM_ADJ
C608
104-K
16V(CHIP)
C611
100uF-M
10V(CHIP)
R602
100-F
1/10W(CHIP)
R603
300-F
1/10W(CHIP)
C612
82uF-M
16V(105)
C617
104-K
16V(CHIP)

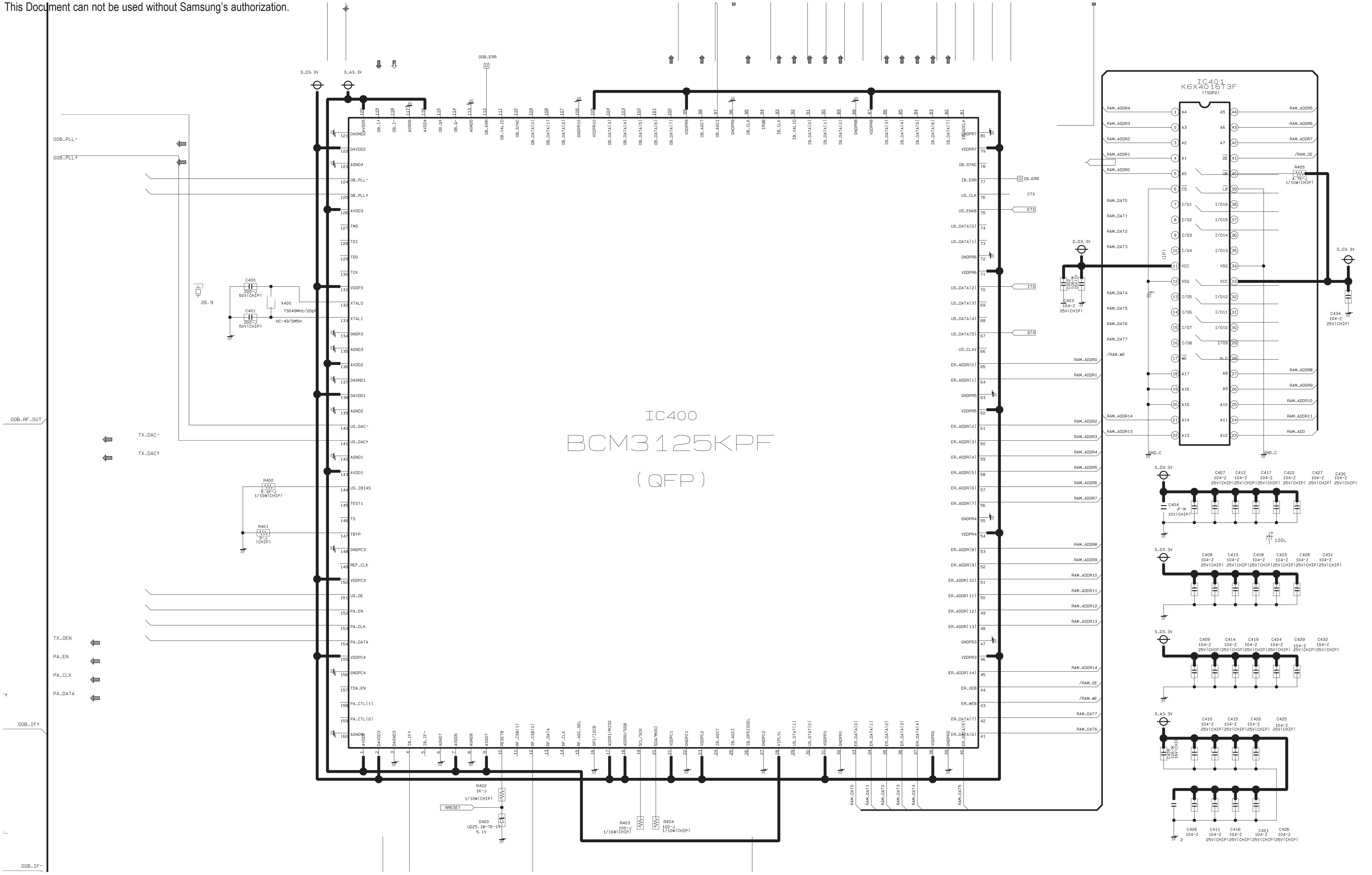
7-3-3 OOB

This Document can not be used without Samsung's authorization.


S_A9V
L201 CORE-F/B
IC200 AD8321AR
PA_DATA
PA_CLK
PA_EN
TX_DEN
UP_RF
SDATA
CLK
DATEN
GND1
BYP1
PD
VCC1
VCC2
VCC3
VOUT
VCC5
VIN-
VIN+
VCC4
GND6
GND5
BYP2
GND4
GND3
GND2
(SOP)
R201 100-J 1/10W(CHIP)
C202 104-Z 25V(CHIP)
C203 104-Z 25V(CHIP)
C205 104-Z 25V(CHIP)
C206 101-J 50V(CHIP)
C216 104-Z 25V(CHIP)
C218 102-K 50V(CHIP)
C219 104-Z 25V(CHIP)
C220 106-M 16V(CHIP)
GND_C
C226 104-Z 25V(CHIP)
R211 150-J 1/10W(CHIP)
C227 104-Z 25V(CHIP)
L209 330nH-J (CHIP)
L210 330nH-J (CHIP)
C230 220-J 50V(CHIP)
L213 390nH-J (CHIP)
L214 390nH-J (CHIP)
C234 470-J 50V(CHIP)
L216 330nH-J (CHIP)
L217 330nH-J (CHIP)
C241 470-J 50V(CHIP)
C245 220-J 50V(CHIP)
C247 103-K 50V(CHIP)
C248 103-K 50V(CHIP)
R225 75-J 1/10W(CHIP)
R226
TX_DAC-
TX_DAC+
OOB_PLL
S_A5V
IC204 SA630D (SOP)
C277 106-M 16V(CHIP)
C278 104-Z 25V(CHIP)
VDD
GND
IN
EINCH
OUT1 /IN1
AC GND
OUT2 /IN2
OOB_RF
C279 103-K 50V(CHIP)
C280 103-K 50V(CHIP)
L218 68nH-J (CHIP)
L219 33nH-J (CHIP)
C281 560-J 50V(CHIP)
C282 560-J 50V(CHIP)
L220 120nH-J (CHIP)
C283 080-C 50V(CHIP)
L221 82nH-J (CHIP)
C284 080-C 50V(CHIP)
L222 470nH-J (CHIP)
C285 330-J 50V(CHIP)
L223 220nH-J (CHIP)
C286 220-J 50V(CHIP)
L224 33nH-J (CHIP)
L225 12nH-J (CHIP)
C287 121-J 50V(CHIP)
C288 121-J 50V(CHIP)
L226 56nH-J (CHIP)
C289 220-J 50V(CHIP)
L227 33nH-J (CHIP)
C290 270-J 50V(CHIP)
L228 150nH-J (CHIP)
C291 680-J 50V(CHIP)
L229 82nH-J (CHIP)
C292 560-J 50V(CHIP)
L230 68nH-J (CHIP)
L231 47nH-J (CHIP)
C293 430-J 50V(CHIP)
C294 430-J 50V(CHIP)
C295 103-K 50V(CHIP)
C296 103-K 50V(CHIP)
C297 103-K 50V(CHIP)
IC205 SA630D (SOP)
C299 104-Z 25V(CHIP)
C300 106-M 16V(CHIP)
C298 103-K 50V(CHIP)
OOB_OUT
OOB_RF_OUT
R253 4.7K-J 1/10W(CHIP)
OOB_BPF
Q210 KSR1104 (SOT-23)
Transistor Output Basis
OOB_BPF
1 70MHz ~ 100MHz BPF SEL
0 100MHz ~ 130MHz BPF SEL
IC201 UPC2798GR (SSOP)
AGC_IN1
AGC_IN2
VAGC
VCC1
OSC_OUT
GND1
OSC_B2
OSC_C2-1
OSC_C2-2
OSC_B1
GND2
MIX_OUT2
MIX_OUT1
O1A
O1B
VAMP_IN1
VAMP_IN2
VCC2
OUT1
OUT2
OOB_RF_OUT
OOB_RF_AGC
R208 56-J 1/10W(CHIP)
C201 102-K 50V(CHIP)
R209 1K-J 1/10W(CHIP)
R215 1K-J 1/10W(CHIP)
C210 104-Z 25V(CHIP)
C211 104-Z 25V(CHIP)
D200 UDZ5.1B-TE-17 5.1V
C224 102-K 50V(CHIP)
C223 102-K 50V(CHIP)
C225 102-K 50V(CHIP)
C228 102-K 50V(CHIP)
C213 102-K 50V(CHIP)
C214 102-K 50V(CHIP)
OOB_PLL-
OOB_PLL+
R203 4.7-J 1/10W(CHIP)
R204 4.7-J 1/10W(CHIP)
R207 100-J 1/10W(CHIP)
R200 47-J 1/10W(CHIP)
R202 47-J 1/10W(CHIP)
R205 1K-J 1/10W(CHIP)
R206 1K-J 1/10W(CHIP)
OOB_IF_AGC
C237 102-K 50V(CHIP)
C238 102-K 50V(CHIP)
R216 1K-J 1/10W(CHIP)
C235 102-K 50V(CHIP)
C236 102-K 50V(CHIP)
SF201 X9650M 44MHZ
SAW-FILTER
C240 106-M 16V(CHIP)
C243 104-Z 25V(CHIP)
C249 102-K 50V(CHIP)
C250 102-K 50V(CHIP)
SF200 X9650M 44MHZ
SAW-FILTER
L233 1uH-K (CHIP)
C255 102-K 50V(CHIP)
C256 102-K 50V(CHIP)
C267 106-M 16V(CHIP)
C270 103-K 50V(CHIP)
IC203 UPC3218 (SSOP)
VCC
INPUT1
INPUT2
VAGC
GND2
OUTPUT1
OUTPUT2
GND1
R224 100K-J 1/10W(CHIP)
R227 100K-J 1/10W(CHIP)
C266 104-Z 25V(CHIP)
C264 103-K 50V(CHIP)
C265 103-K 50V(CHIP)
R248 1K-J 1/10W(CHIP)
R249 1K-J 1/10W(CHIP)
R250 4.7K-J 1/10W(CHIP)
R252 10K-J 1/10W(CHIP)
C276 104-Z 25V(CHIP)
OOB_IF+
OOB_IF-
TX_DEN
PA_EN
PA_CLK
PA_DAT

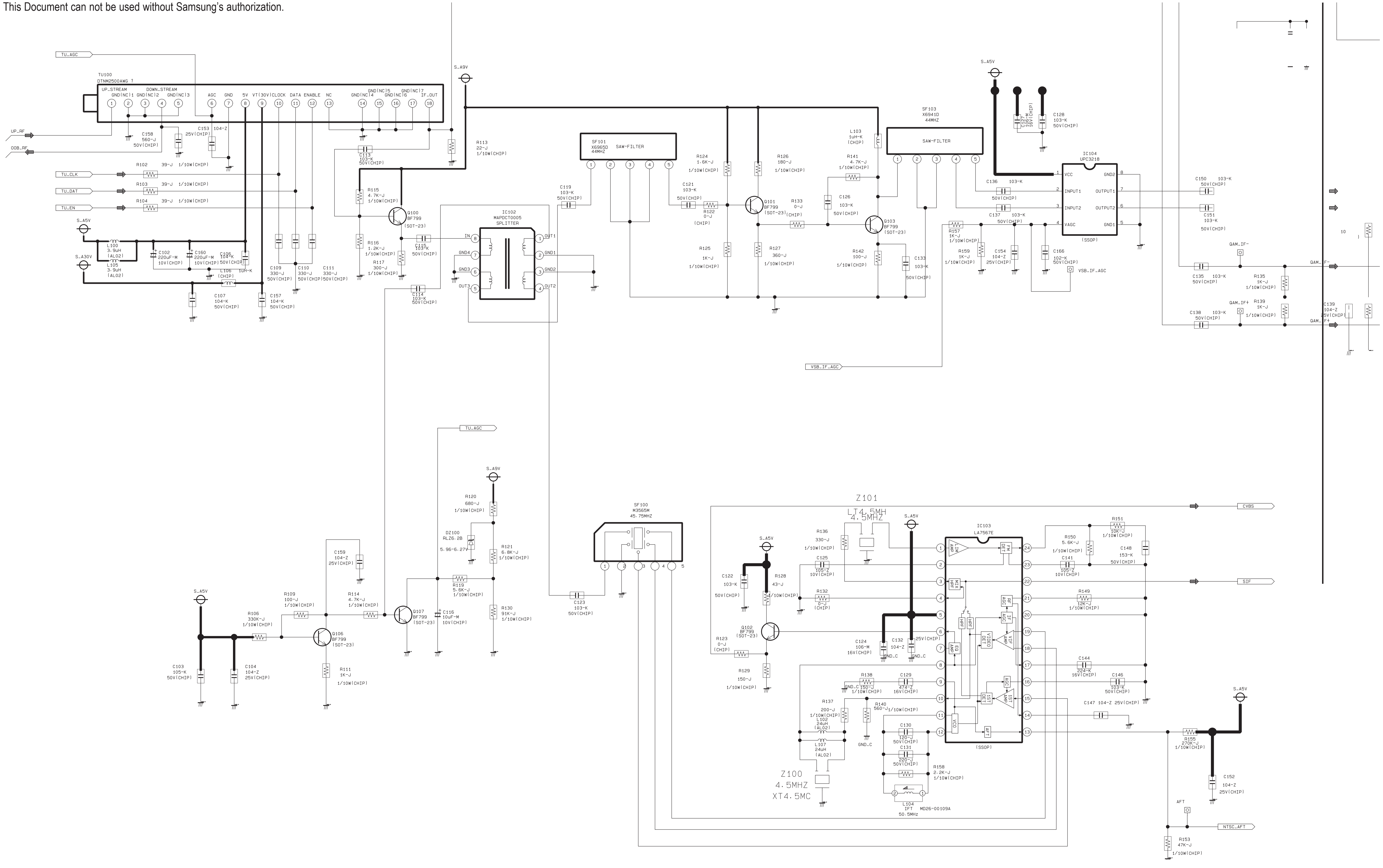
7-3-4 QAM

This Document can not be used without Samsung's authorization.


IC400
BCM3125KPF
(QFP)
IC401
K6X4016T3F
(TSOP2)
S_D3.3V
S_A3.3V
OOB_ERR
IB_ERR
CTX
ETX
ITX
QTX
OOB_PLL-
OOB_PLL+
OOB_RF_OUT
TX_DAC-
TX_DAC+
TX_OEN
PA_EN
PA_CLK
PA_DATA
OOB_IF+
OOB_IF-
NRESET
C400
200-J
50V(CHIP)
C401
200-J
50V(CHIP)
X400
73049MHz/20pF
HC-49/SM5H
R400
5.1K-J
1/10W(CHIP)
R401
0-J
(CHIP)
R402
1K-J
1/10W(CHIP)
D400
UDZ5.1B-TE-17
5.1V
R403
100-J
1/10W(CHIP)
R404
100-J
1/10W(CHIP)
R405
4.7K-J
1/10W(CHIP)
C403
104-Z
25V(CHIP)
C434
104-Z
25V(CHIP)
C404
1F-M
10V(CHIP)
C405
C407
C408
C409
C410
C411
C412
C413
C414
C415
C416
C417
C418
C419
C420
C421
C422
C423
C424
C425
C426
C427
C428
C429
C430
C431
C432
104-Z
25V(CHIP)
GND_C
100L
RAM_ADDR0
RAM_ADDR1
RAM_ADDR2
RAM_ADDR3
RAM_ADDR4
RAM_ADDR5
RAM_ADDR6
RAM_ADDR7
RAM_ADDR8
RAM_ADDR9
RAM_ADDR10
RAM_ADDR11
RAM_ADDR12
RAM_ADDR13
RAM_ADDR14
RAM_DAT0
RAM_DAT1
RAM_DAT2
RAM_DAT3
RAM_DAT4
RAM_DAT5
RAM_DAT6
RAM_DAT7
/RAM_OE
/RAM_WE
DAGND2
DAVDD2
AGND4
OB_PLL-
OB_PLL+
AVDD3
TMS
TDI
TDO
TCK
VDDP3
XTALO
XTALI
GNDP3
AGND3
AVDD2
DAGND1
DAVDD1
AGND2
US_DAC-
US_DAC+
AGND1
AVDD1
US_IBIAS
TEST1
TS
TBYP
GNDPC3
REF_CLK
VDDPC3
US_OE
PA_EN
PA_CLK
PA_DATA
VDDPC4
GNDPC4
TDA_EN
PA_CTL[1]
PA_CTL[0]
AGND9
IB_SYNC
IB_ERR
US_CLK
US_ENAB
US_DATA[0]
US_DATA[1]
US_DATA[2]
US_DATA[3]
US_DATA[4]
US_DATA[5]
US_CLAV
ER_ADDR[0]
ER_ADDR[1]
ER_ADDR[2]
ER_ADDR[3]
ER_ADDR[4]
ER_ADDR[5]
ER_ADDR[6]
ER_ADDR[7]
ER_ADDR[8]
ER_ADDR[9]
ER_ADDR[10]
ER_ADDR[11]
ER_ADDR[12]
ER_ADDR[13]
ER_ADDR[14]
ER_OEB
ER_WEB
ER_DATA[7]
ER_DATA[6]
RESETB
RF_CSB[1]
RF_CSB[0]
RF_DATA
RF_CLK
RF_AGC_SEL
SPI/I2CB
ADDR1/MISO
ADDR0/SSB
SCL/SCK
SDA/MOSI
IB_AGCI
IB_GPSIGDEL
VIPLVL
US_STAT[1]
US_STAT[0]
ER_DATA[0]
ER_DATA[1]
ER_DATA[2]
ER_DATA[3]
ER_DATA[4]
ER_DATA[5]
OB_I+
OB_I-
OB_Q+
OB_Q-
OB_ERR
OB_VALID
OB_SYNC
OB_DATA[0]
OB_DATA[1]
OB_DATA[2]
OB_DATA[3]
OB_DATA[4]
OB_DATA[5]
OB_DATA[6]
OB_DATA[7]
OB_AGCT
OB_AGCI
OB_CLK
IRQB
IB_CLK
IB_VALID
IB_DATA[0]
IB_DATA[1]
IB_DATA[2]
IB_DATA[3]
IB_DATA[4]
IB_DATA[5]
IB_DATA[6]
IB_DATA[7]
IB_ADCLK
A4
A3
A2
A1
A0
CS
I/O1
I/O2
I/O3
I/O4
VCC
VSS
I/O5
I/O6
I/O7
I/O8
WE
A17
A16
A15
A14
A13
A5
A6
A7
OE
UB
LB
I/O16
I/O15
I/O14
I/O13
I/O12
I/O11
I/O10
I/O9
N.C
A8
A9
A10
A11
A12
26.9

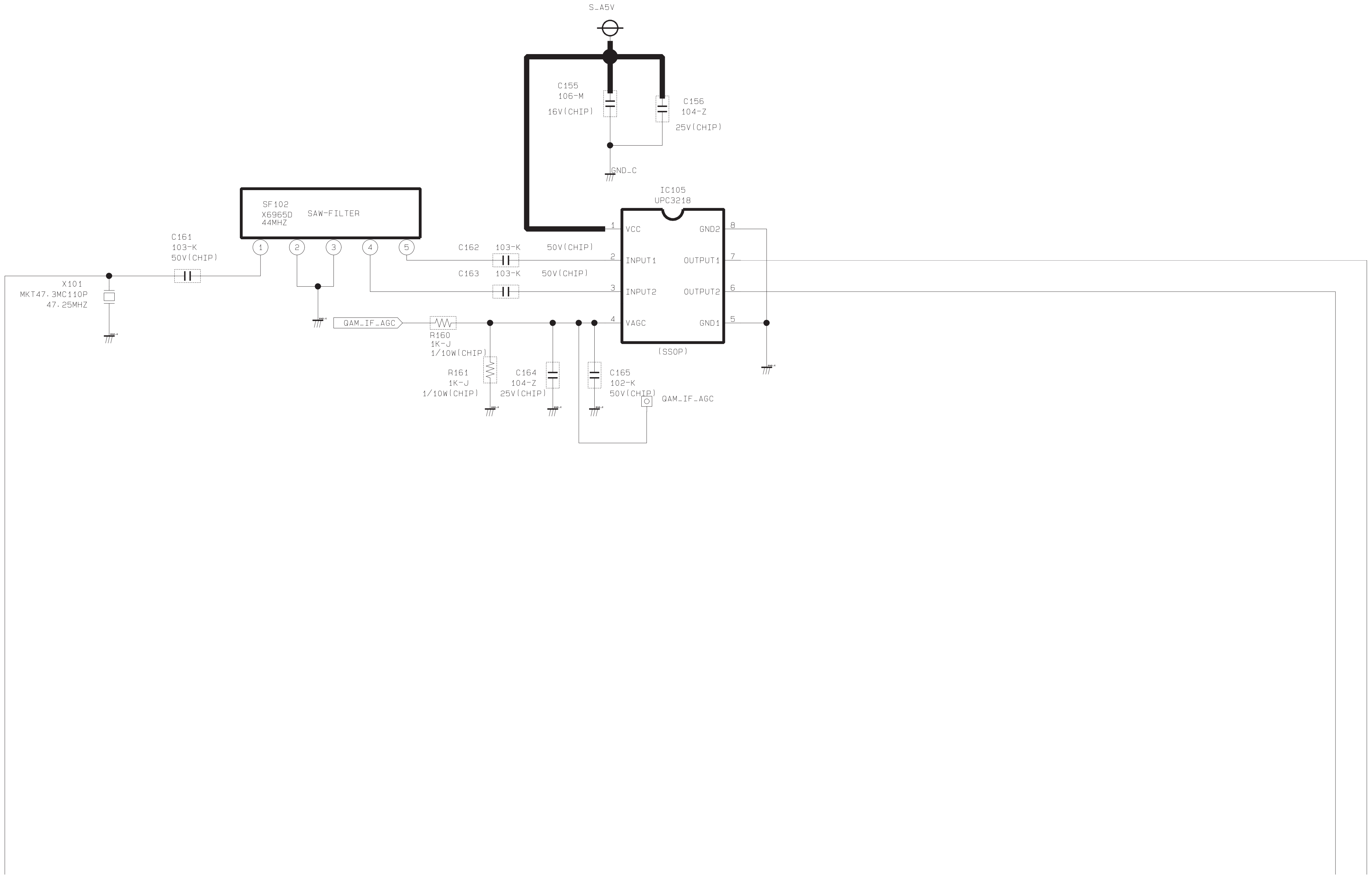
7-3-5 RF_IF1

This Document can not be used without Samsung's authorization.


TU_AGC
TU100
DTNM2500AWG
UP_STREAM
DOWN_STREAM
GND(NC)1
GND(NC)2
GND(NC)3
AGC
GND
5V
VT(30V)
CLOCK
DATA
ENABLE
NC
GND(NC)4
GND(NC)5
GND(NC)6
GND(NC)7
IF_OUT
UP_RF
OOB_RF
TU_CLK
TU_DAT
TU_EN
S_A5V
S_A30V
S_A9V
R102 39-J 1/10W(CHIP)
R103 39-J 1/10W(CHIP)
R104 39-J 1/10W(CHIP)
C158 560-J 50V(CHIP)
C153 104-Z 25V(CHIP)
L100 3.9uH (AL02)
L105 3.9uH (AL02)
C102 220uF-M 10V(CHIP)
C160 220uF-M 10V(CHIP)
C105 104-K 50V(CHIP)
L106 (CHIP)
1uH-K
C107 104-K 50V(CHIP)
C157 104-K 50V(CHIP)
C109 330-J 50V(CHIP)
C110 330-J 50V(CHIP)
C111 330-J 50V(CHIP)
C113 103-K 50V(CHIP)
R113 22-J 1/10W(CHIP)
R115 4.7K-J 1/10W(CHIP)
Q100 BF799 (SOT-23)
R116 1.2K-J 1/10W(CHIP)
R117 300-J 1/10W(CHIP)
C115 103-K 50V(CHIP)
C114 103-K 50V(CHIP)
IC102 MAPDCT0005 SPLITTER
IN
GND4
GND3
OUT3
OUT1
GND1
GND2
OUT2
C119 103-K 50V(CHIP)
SF101 X6965D 44MHZ SAW-FILTER
C121 103-K 50V(CHIP)
R122 0-J (CHIP)
R124 1.6K-J 1/10W(CHIP)
R125 1K-J 1/10W(CHIP)
R126 180-J 1/10W(CHIP)
Q101 BF799 (SOT-23)
R127 360-J 1/10W(CHIP)
R133 0-J (CHIP)
L103 1uH-K (CHIP)
R141 4.7K-J 1/10W(CHIP)
C126 103-K 50V(CHIP)
Q103 BF799 (SOT-23)
R142 100-J 1/10W(CHIP)
C133 103-K 50V(CHIP)
SF103 X6941D 44MHZ SAW-FILTER
C127 104-Z 16V(CHIP)
C128 103-K 50V(CHIP)
IC104 UPC3218
VCC
INPUT1
INPUT2
VAGC
GND2
OUTPUT1
OUTPUT2
GND1
(SSOP)
C136 103-K 50V(CHIP)
C137 103-K 50V(CHIP)
R157 1K-J 1/10W(CHIP)
R159 1K-J 1/10W(CHIP)
C154 104-Z 25V(CHIP)
C166 102-K 50V(CHIP)
VSB_IF_AGC
C150 103-K 50V(CHIP)
C151 103-K 50V(CHIP)
GAM_IF-
GAM_IF+
C135 103-K 50V(CHIP)
C138 103-K 50V(CHIP)
R135 1K-J 1/10W(CHIP)
R139 1K-J 1/10W(CHIP)
C139 104-Z 25V(CHIP)
TU_AGC
S_A9V
R120 680-J 1/10W(CHIP)
DZ100 RLZ6.2B 5.96-6.27V
R121 6.8K-J 1/10W(CHIP)
R119 5.6K-J 1/10W(CHIP)
C116 10uF-M 10V(CHIP)
R130 91K-J 1/10W(CHIP)
C159 104-Z 25V(CHIP)
R109 100-J 1/10W(CHIP)
R114 4.7K-J 1/10W(CHIP)
Q107 BF799 (SOT-23)
R106 330K-J 1/10W(CHIP)
Q106 BF799 (SOT-23)
R111 1K-J 1/10W(CHIP)
C103 105-K 50V(CHIP)
C104 104-Z 25V(CHIP)
SF100 M3565M 45.75MHZ
C123 103-K 50V(CHIP)
Z101 LT4.5MH 4.5MHZ
R136 330-J 1/10W(CHIP)
C125 105-Z 10V(CHIP)
C122 103-K 50V(CHIP)
R128 43-J 1/10W(CHIP)
R132 0-J (CHIP)
Q102 BF799 (SOT-23)
R123 0-J (CHIP)
R129 150-J 1/10W(CHIP)
C124 106-M 16V(CHIP)
C132 104-Z 25V(CHIP)
GND_C
R138 150-J 1/10W(CHIP)
C129 474-Z 16V(CHIP)
R137 200-J 1/10W(CHIP)
R140 560-J 1/10W(CHIP)
L102 24uH (AL02)
L107 24uH (AL02)
C130 120-J 50V(CHIP)
C131 220-J 50V(CHIP)
R158 2.2K-J 1/10W(CHIP)
L104 IFT MD26-00109A 50.5MHz
Z100 4.5MHZ XT4.5MC
IC103 LA7567E
(SSOP)
R150 5.6K-J 1/10W(CHIP)
R151 10K-J 1/10W(CHIP)
C141 105-Z 10V(CHIP)
C148 153-K 50V(CHIP)
R149 12K-J 1/10W(CHIP)
C144 224-K 16V(CHIP)
C146 103-K 50V(CHIP)
C147 104-Z 25V(CHIP)
CVBS
SIF
S_A5V
R155 270K-J 1/10W(CHIP)
C152 104-Z 25V(CHIP)
AFT
NTSC_AFT
R153 47K-J 1/10W(CHIP)

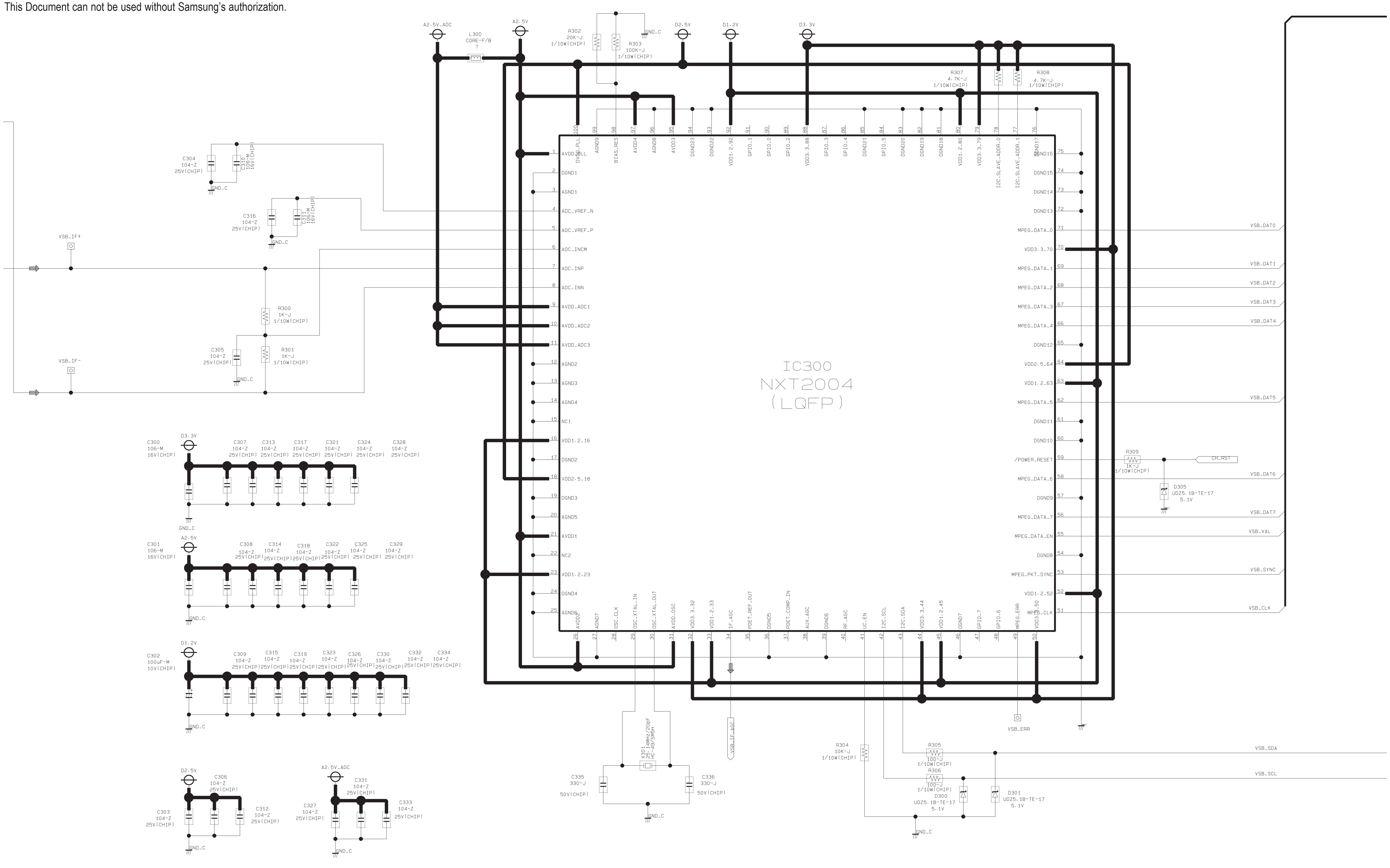
7-3-6 RF_IF2

This Document can not be used without Samsung's authorization.


S_A5V
C155
106-M
16V(CHIP)
C156
104-Z
25V(CHIP)
GND_C
IC105
UPC3218
VCC
INPUT1
INPUT2
VAGC
GND2
OUTPUT1
OUTPUT2
GND1
(SSOP)
SF102
X6965D
44MHZ
SAW-FILTER
C161
103-K
50V(CHIP)
X101
MKT47.3MC110P
47.25MHZ
C162
103-K
50V(CHIP)
C163
103-K
50V(CHIP)
QAM_IF_AGC
R160
1K-J
1/10W(CHIP)
R161
1K-J
1/10W(CHIP)
C164
104-Z
25V(CHIP)
C165
102-K
50V(CHIP)
QAM_IF_AGC

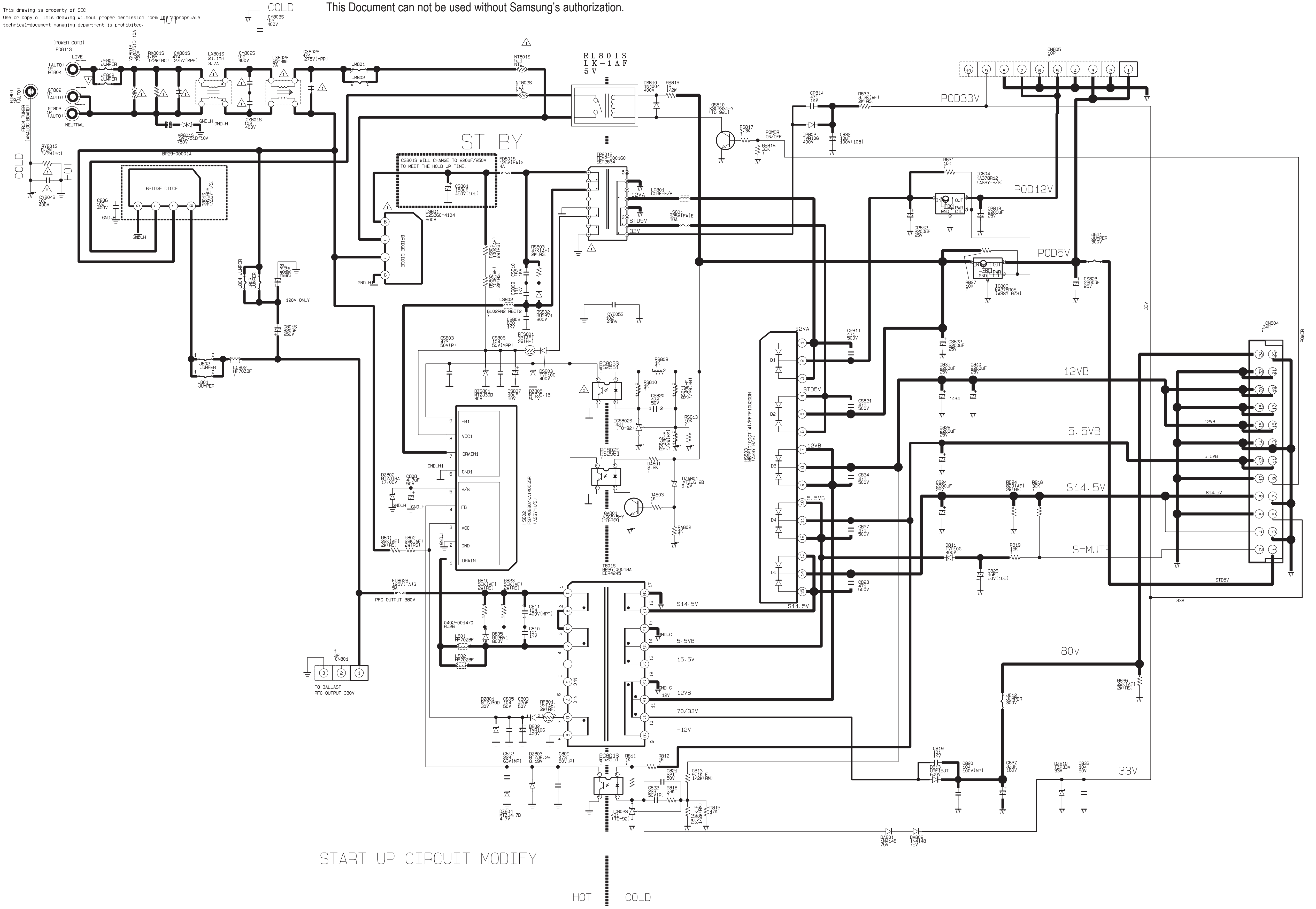
7-3-7 VSB

This Document can not be used without Samsung's authorization.


IC300
NXT2004
(LQFP)
A2.5V_ADC
A2.5V
D2.5V
D1.2V
D3.3V
L300 CORE-F/B ?
R302 20K-J 1/10W(CHIP)
R303 100K-J 1/10W(CHIP)
R307 4.7K-J 1/10W(CHIP)
R308 4.7K-J 1/10W(CHIP)
C304 104-Z 25V(CHIP)
C310 106-M 16V(CHIP)
C316 104-Z 25V(CHIP)
C311 106-M 16V(CHIP)
VSB_IF+
VSB_IF-
R300 1K-J 1/10W(CHIP)
R301 1K-J 1/10W(CHIP)
C305 104-Z 25V(CHIP)
GND_C
C300 106-M 16V(CHIP)
C307 C313 C317 C321 C324 C328 104-Z 25V(CHIP)
C301 106-M 16V(CHIP)
C308 C314 C318 C322 C325 C329 104-Z 25V(CHIP)
C302 100uF-M 10V(CHIP)
C309 C315 C319 C323 C326 C330 C332 C334 104-Z 25V(CHIP)
C303 104-Z 25V(CHIP)
C306 104-Z 25V(CHIP)
C312 104-Z 25V(CHIP)
C327 104-Z 25V(CHIP)
C331 104-Z 25V(CHIP)
C333 104-Z 25V(CHIP)
C335 330-J 50V(CHIP)
C336 330-J 50V(CHIP)
X301 25.14MHz/20pF HC-49/SMDH
VSB_IF_AGC
R304 10K-J 1/10W(CHIP)
R305 100-J 1/10W(CHIP)
R306 100-J 1/10W(CHIP)
D300 UDZ5.1B-TE-17 5.1V
D301 UDZ5.1B-TE-17 5.1V
R309 1K-J 1/10W(CHIP)
D305 UDZ5.1B-TE-17 5.1V
CH_RST
VSB_ERR
VSB_SDA
VSB_SCL
VSB_DAT0
VSB_DAT1
VSB_DAT2
VSB_DAT3
VSB_DAT4
VSB_DAT5
VSB_DAT6
VSB_DAT7
VSB_VAL
VSB_SYNC
VSB_CLK
1 AVDD_PLL
2 DGND1
3 AGND1
4 ADC_VREF_N
5 ADC_VREF_P
6 ADC_INCM
7 ADC_INP
8 ADC_INN
9 AVDD_ADC1
10 AVDD_ADC2
11 AVDD_ADC3
12 AGND2
13 AGND3
14 AGND4
15 NC1
16 VDD1.2_16
17 DGND2
18 VDD2.5_18
19 DGND3
20 AGND5
21 AVDD1
22 NC2
23 VDD1.2_23
24 DGND4
25 AGND6
26 AVDD2
27 AGND7
28 OSC_CLK
29 OSC_XTAL_IN
30 OSC_XTAL_OUT
31 AVDD_OSC
32 VDD3.3_32
33 VDD1.2_33
34 IF_AGC
35 PDET_REF_OUT
36 DGND5
37 PDET_COMP_IN
38 AUX_AGC
39 DGND6
40 RF_AGC
41 UC_EN
42 I2C_SCL
43 I2C_SDA
44 VDD3.3_44
45 VDD1.2_45
46 DGND7
47 GPIO_7
48 GPIO_6
49 MPEG_ERR
50 VDD3.3_50
51 MPEG_CLK
52 VDD1.2_52
53 MPEG_PKT_SYNC
54 DGND8
55 MPEG_DATA_EN
56 MPEG_DATA_7
57 DGND9
58 MPEG_DATA_6
59 /POWER_RESET
60 DGND10
61 DGND11
62 MPEG_DATA_5
63 VDD1.2_63
64 VDD2.5_64
65 DGND12
66 MPEG_DATA_4
67 MPEG_DATA_3
68 MPEG_DATA_2
69 MPEG_DATA_1
70 VDD3.3_70
71 MPEG_DATA_0
72 DGND13
73 DGND14
74 DGND15
75 DGND16
76 DGND17
77 I2C_SLAVE_ADDR_1
78 I2C_SLAVE_ADDR_0
79 VDD3.3_79
80 VDD1.2_80
81 DGND18
82 DGND19
83 DGND20
84 GPIO_5
85 DGND21
86 GPIO_4
87 GPIO_3
88 VDD3.3_88
89 GPIO_2
90 GPIO_0
91 GPIO_1
92 VDD1.2_92
93 DGND22
94 DGND23
95 AVDD3
96 AGND8
97 AVDD4
98 BIAS_RES
99 AGND9
100 DVDD_PLL

7-4 POWER

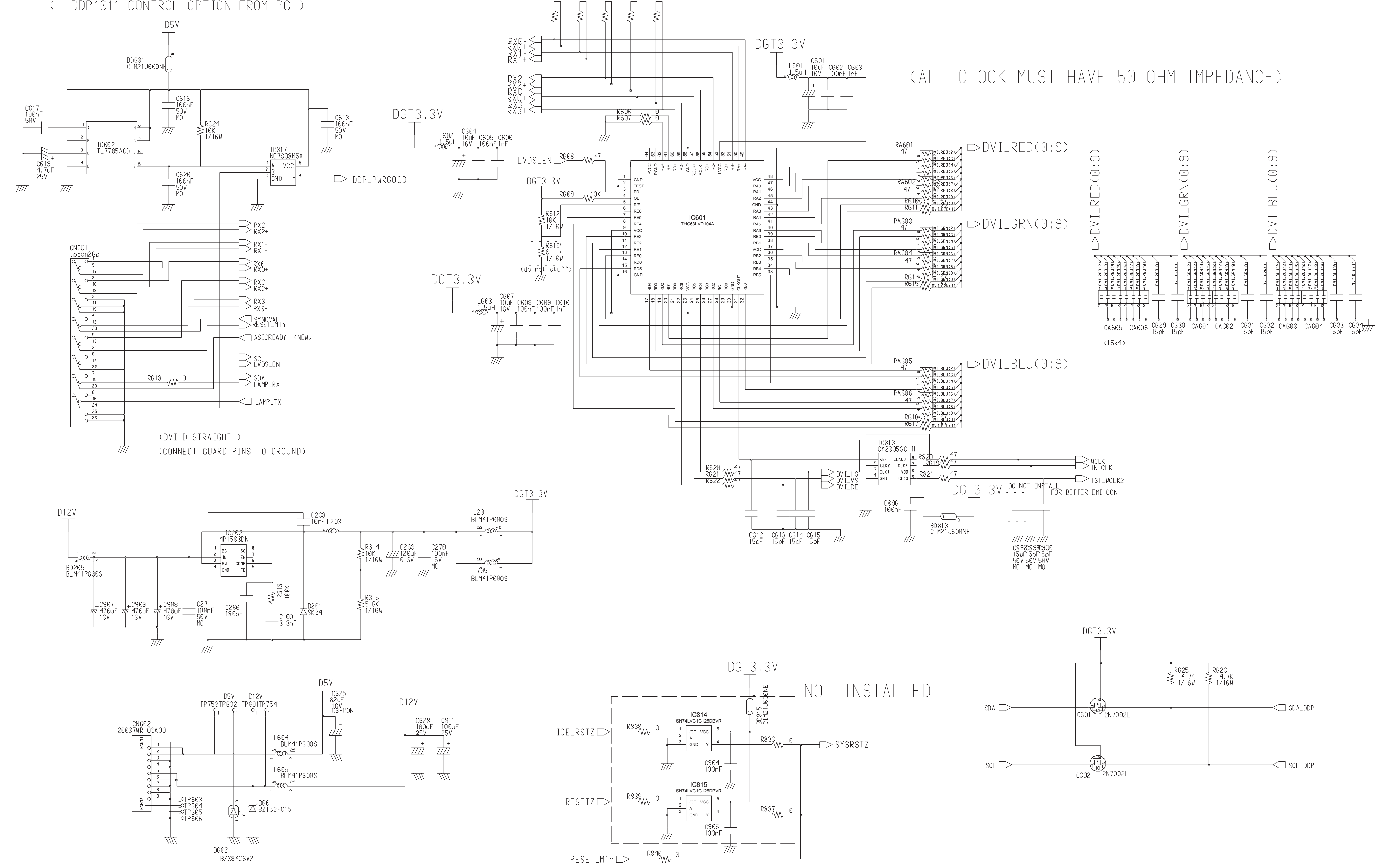
This Document can not be used without Samsung's authorization.


This drawing is property of SEC
Use or copy of this drawing without proper permission form the appropriate
technical-document managing department is prohibited.
COLD
HOT
(POWER CORD)
LIVE
NEUTRAL
FROM TUNER (ANALOG BOARD)
BRIDGE DIODE
RL801S
LK-1AF
5V
ST_BY
CS801S WILL CHANGE TO 220uF/250V
TO MEET THE HOLD-UP TIME.
12VA
STD5V
33V
POD33V
POD12V
POD5V
12VB
5.5VB
S14.5V
S-MUTE
80V
33V
POWER ON/OFF
120V ONLY
PFC OUTPUT 380V
TO BALLAST
PFC OUTPUT 380V
FB1
VCC1
DRAIN1
GND1
S/S
FB
VCC
GND
DRAIN
S14.5V
5.5VB
15.5V
12VB
70/33V
-12V
START-UP CIRCUIT MODIFY
HOT
COLD

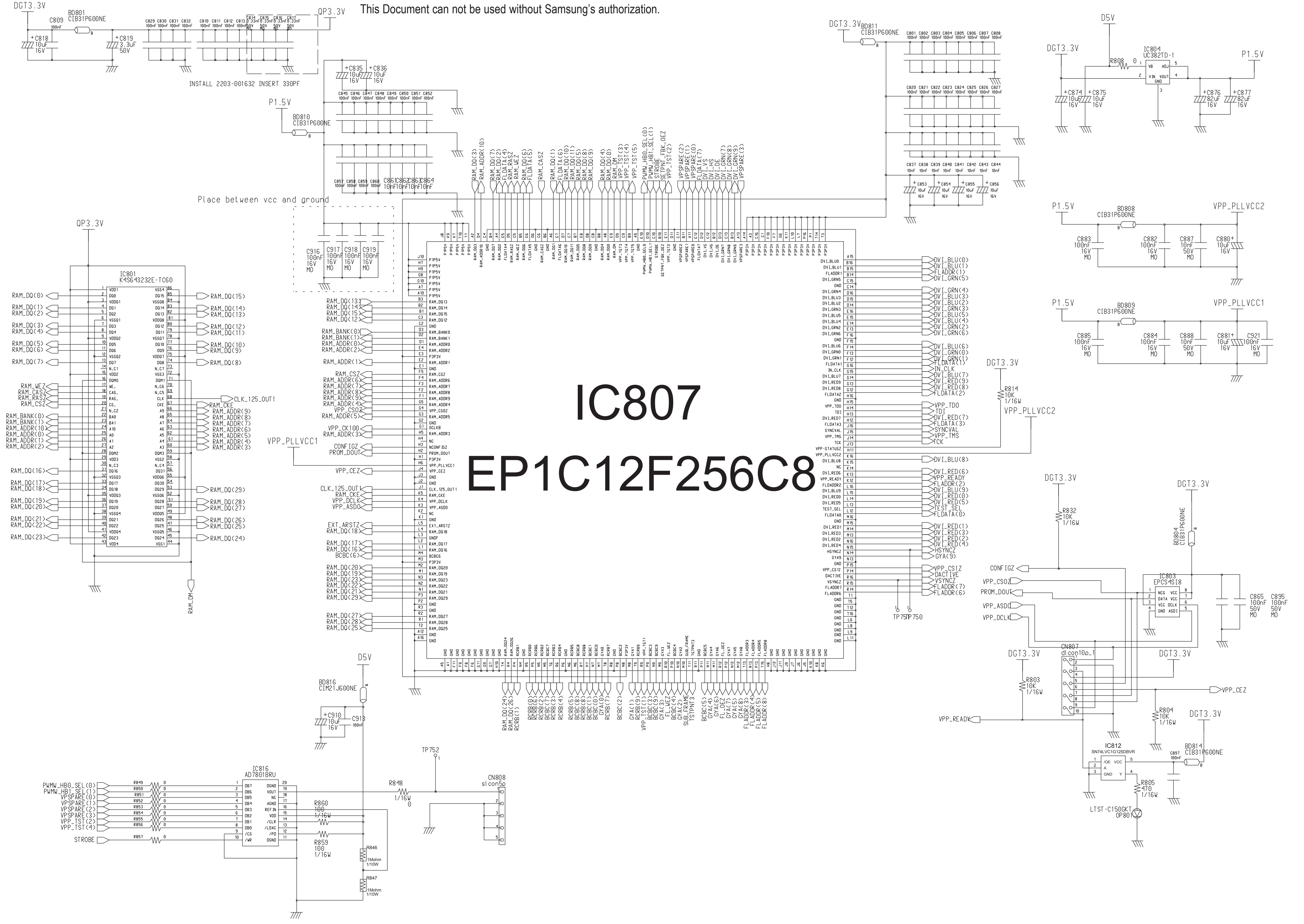
7-5 DMD

7-5-1 SIL151

This Document can not be used without Samsung's authorization.


(DDP1011 CONTROL OPTION FROM PC)
D5V
BD601 CIM21J600NE
C616 100nF 50V MO
R624 10K 1/16W
C617 100nF 50V
C619 4.7uF 25V
IC602 TL7705ACD
C620 100nF 50V MO
IC817 NC7S08M5X
C618 100nF 50V MO
DDP_PWRGOOD
CN601 tocon26p
RX2- RX2+
RX1- RX1+
RX0- RX0+
RXC- RXC+
RX3- RX3+
SYNCVAL RESET_M1n
ASICREADY (NEW)
SCL LVDS_EN
R618 0
SDA LAMP_RX
LAMP_TX
(DVI-D STRAIGHT)
(CONNECT GUARD PINS TO GROUND)
R601 100 R602 100 R603 100 R604 100 R605 100
RX0- RX0+ RX1- RX1+
RX2- RX2+ RXC- RXC+ RX3- RX3+
R606 0 R607 0
DGT3.3V
L601 1.5uH C601 10uF 16V C602 100nF C603 1nF
(ALL CLOCK MUST HAVE 50 OHM IMPEDANCE)
DGT3.3V
L602 1.5uH C604 10uF 16V C605 100nF C606 1nF
LVDS_EN R608 47
DGT3.3V
R609 10K
R612 10K 1/16W
R613 0 1/16W
(do not stuff)
IC601 THC63LVD104A
DGT3.3V
L603 1.5uH C607 10uF 16V C608 100nF C609 100nF C610 1nF
RA601 47 RA602 47 R610 R611
DVI_RED(0:9)
RA603 47 RA604 47 R614 R615
DVI_GRN(0:9)
RA605 47 RA606 47 R616 R617
DVI_BLU(0:9)
DVI_RED(0:9) DVI_GRN(0:9) DVI_BLU(0:9)
CA605 CA606 C629 15pF C630 15pF CA601 CA602 C631 15pF C632 15pF CA603 CA604 C633 15pF C634 15pF
(15x4)
IC813 CY2305SC-1H
R820 47 R819 47 R821 47
WCLK IN_CLK TST_WCLK2
R620 47 R621 47 R622 47
DVI_HS DVI_VS DVI_DE
C612 15pF C613 15pF C614 15pF C615 15pF
DGT3.3V
C896 100nF
BD813 CIM21J600NE
DO NOT INSTALL FOR BETTER EMI CON.
C898 C899 C900 15pF 15pF 15pF 50V 50V 50V MO MO MO
D12V
BD205 BLM41P600S
IC202 MP1583DN
C268 10nF L203
DGT3.3V
L204 BLM41P600S
R314 10K 1/16W
C269 120uF 6.3V
C270 100nF 16V MO
L705 BLM41P600S
C907 470uF 16V C909 470uF 16V C908 470uF 16V C271 100nF 50V MO
C266 180pF
R313 100K
C100 3.3nF
D201 SK34
R315 5.6K 1/16W
D5V
C625 82uF 16V OS-CON
D5V D12V
TP753 TP602 TP601 TP754
D12V
CN602 20037WR-09A00
L604 BLM41P600S
L605 BLM41P600S
C628 100uF 25V C911 100uF 25V
TP603 TP604 TP605 TP606
D601 BZT52-C15
D602 BZX84C6V2
DGT3.3V
NOT INSTALLED
BD815 CIM21J600NE
IC814 SN74LVC1G125DBVR
ICE_RSTZ R838 0
R836 0 SYSRSTZ
C904 100nF
IC815 SN74LVC1G125DBVR
RESETZ R839 0
R837 0
C905 100nF
RESET_M1n R840 0
DGT3.3V
R625 4.7K 1/16W R626 4.7K 1/16W
SDA Q601 2N7002L SDA_DDP
SCL Q602 2N7002L SCL_DDP

7-5-2 FPGA

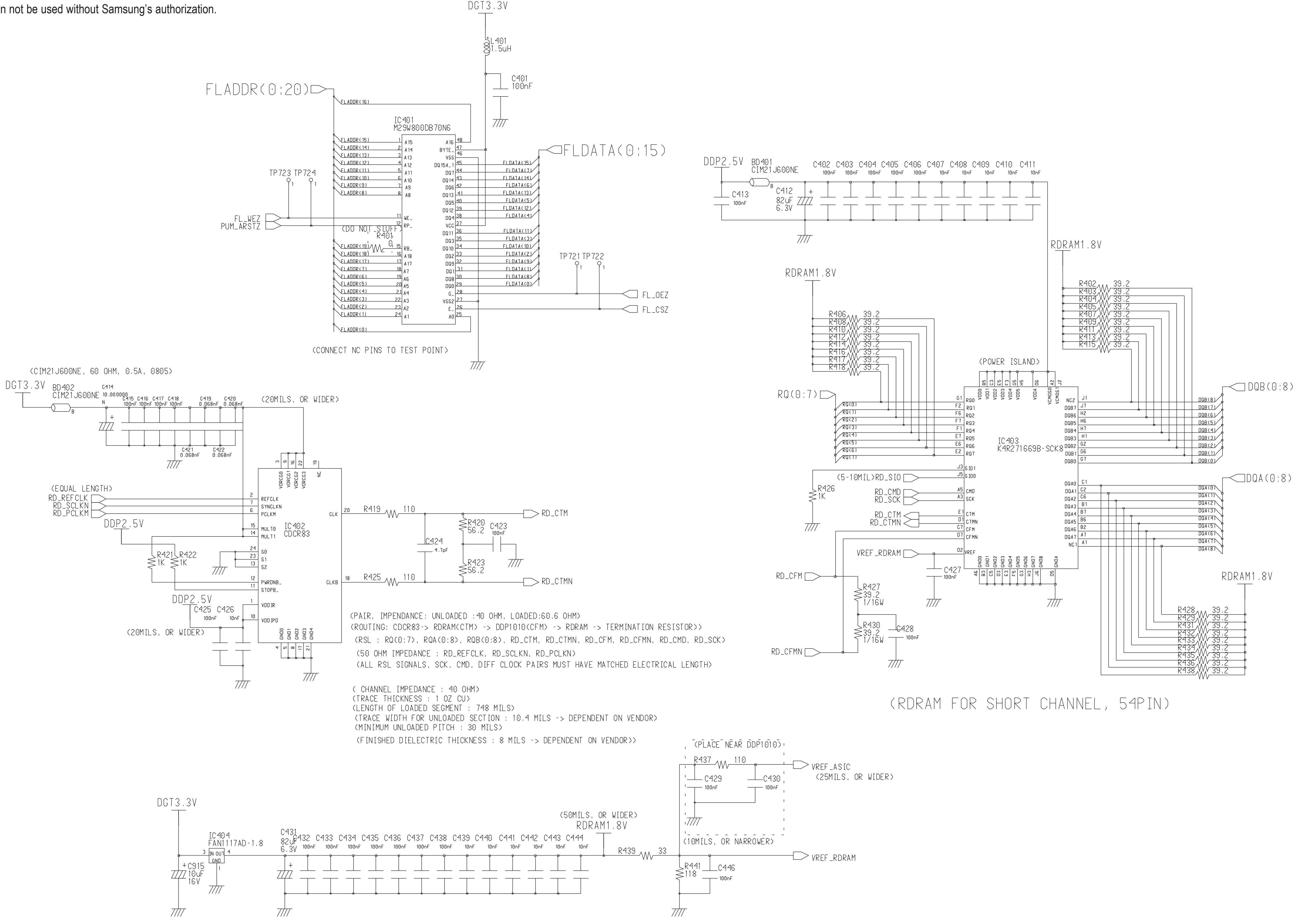


This Document can not be used without Samsung's authorization.

IC807
EP1C12F256C8
IC801
K4S643232E-TC60
IC816
AD7801BRU
IC803
EPCS4SI8
IC804
UC382TD-1
IC812
SN74LVC1G125DBVR
CN807
dlcon10p_1
CN808
slcon5p
DGT3.3V
QP3.3V
P1.5V
D5V
VPP_PLLVCC1
VPP_PLLVCC2
BD801
BD804
BD808
BD809
BD810
BD811
BD814
BD816
CIB31P600NE
CIM21J600NE
INSTALL 2203-001632 INSERT 330PF
Place between vcc and ground
CLK_125_OUT1
CONFIGZ
VPP_CSOZ
PROM_DOUT
VPP_ASDO
VPP_DCLK
VPP_CEZ
VPP_READY
STROBE
TP750
TP751
TP752
LTST-C150GKT
OP801
R803
R804
R805
R808
R814
R832
R846
R847
R848
R859
R860
10K
1/16W
1Mohm
1/10W

7-5-3 FLASH

This Document can not be used without Samsung's authorization.

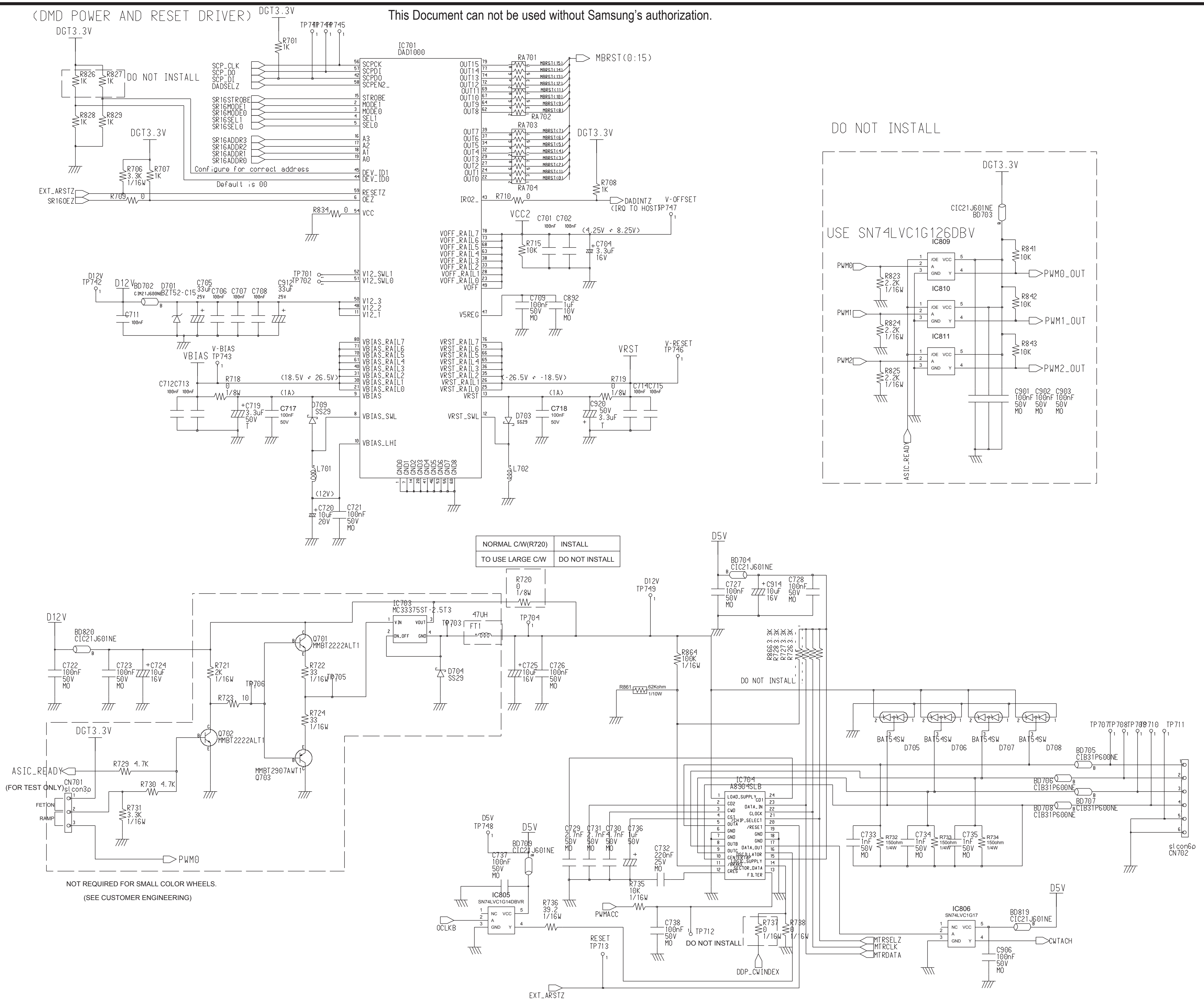

DGT3.3V
L401
1.5uH
C401
100nF
FLADDR(0:20)
FLADDR(16)
IC401
M29W800DB70N6
FLDATA(0:15)
TP723 TP724
FL_WEZ
PUM_ARSTZ
(DO NOT STUFF)
R401
0
TP721 TP722
FL_OEZ
FL_CSZ
(CONNECT NC PINS TO TEST POINT)
(CIM21J600NE, 60 OHM, 0.5A, 0805)
DGT3.3V
BD402
CIM21J600NE
C414
10.000000
C415 C416 C417 C418 C419 C420
(20MILS, OR WIDER)
C421
0.068nF
C422
0.068nF
(EQUAL LENGTH)
RD_REFCLK
RD_SCLKN
RD_PCLKM
DDP2.5V
R421
1K
R422
1K
IC402
CDCR83
R419
110
R420
56.2
C423
100nF
C424
4.7pF
R423
56.2
R425
110
RD_CTM
RD_CTMN
DDP2.5V
C425 C426
(20MILS, OR WIDER)
DDP2.5V
BD401
CIM21J600NE
C402 C403 C404 C405 C406 C407 C408 C409 C410 C411
C413
100nF
C412
82uF
6.3V
RDRAM1.8V
R402 R403 R404 R405 R407 R409 R411 R413 R415
39.2
RDRAM1.8V
R406 R408 R410 R412 R414 R416 R417 R418
39.2
(POWER ISLAND)
RQ(0:7)
DQB(0:8)
IC403
K4R271669B-SCK8
DQA(0:8)
(5-10MIL)RD_SIO
R426
1K
RD_CMD
RD_SCK
RD_CTM
RD_CTMN
VREF_RDRAM
C427
100nF
RD_CFM
R427
39.2
1/16W
R430
39.2
1/16W
C428
100nF
RD_CFMN
RDRAM1.8V
R428 R429 R431 R432 R433 R434 R435 R436 R438
39.2
(RDRAM FOR SHORT CHANNEL, 54PIN)
(PLACE NEAR DDP1010)
R437
110
C429
100nF
C430
100nF
VREF_ASIC
(25MILS, OR WIDER)
(10MILS, OR NARROWER)
DGT3.3V
IC404
FAN1117AD-1.8
C915
10uF
16V
C431
82uF
6.3V
C432 C433 C434 C435 C436 C437 C438 C439 C440 C441 C442 C443 C444
(50MILS, OR WIDER)
RDRAM1.8V
R439
33
R441
118
C446
100nF
VREF_RDRAM

(PAIR, IMPENDANCE: UNLOADED :40 OHM, LOADED:60.6 OHM)
(ROUTING: CDCR83-> RDRAM(CTM) -> DDP1010(CFM) -> RDRAM -> TERMINATION RESISTOR))
(RSL : RQ(0:7), RQA(0:8), RQB(0:8), RD_CTM, RD_CTMN, RD_CFM, RD_CFMN, RD_CMD, RD_SCK)
(50 OHM IMPEDANCE : RD_REFCLK, RD_SCLKN, RD_PCLKN)
(ALL RSL SIGNALS, SCK, CMD, DIFF CLOCK PAIRS MUST HAVE MATCHED ELECTRICAL LENGTH)

(CHANNEL IMPEDANCE : 40 OHM)
(TRACE THICKNESS : 1 OZ CU)
(LENGTH OF LOADED SEGMENT : 748 MILS)
(TRACE WIDTH FOR UNLOADED SECTION : 10.4 MILS -> DEPENDENT ON VENDOR)
(MINIMUM UNLOADED PITCH : 30 MILS)
(FINISHED DIELECTRIC THICKNESS : 8 MILS -> DEPENDENT ON VENDOR))

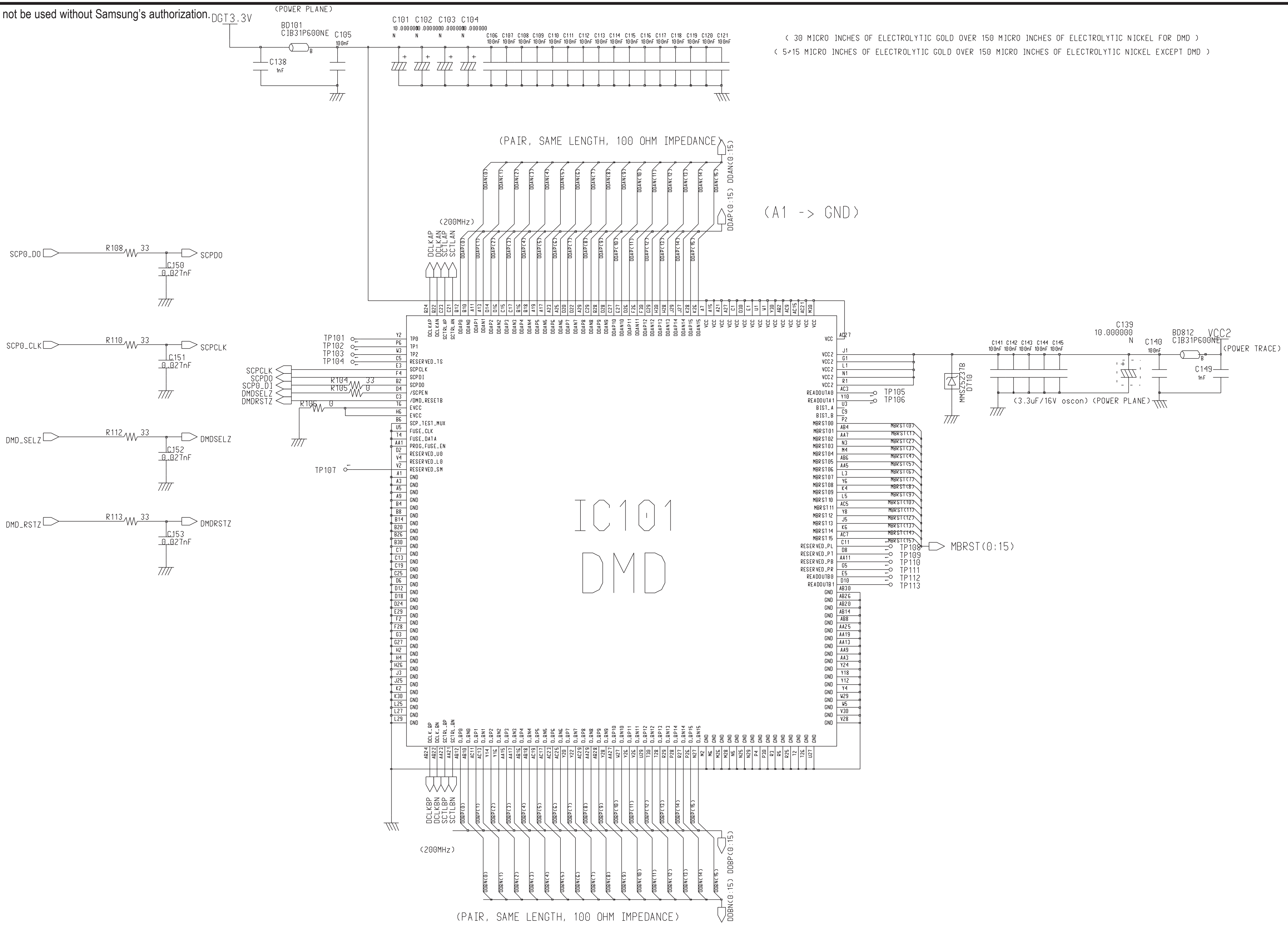
7-5-4 DAD1000

This Document can not be used without Samsung's authorization.


(DMD POWER AND RESET DRIVER)
DGT3.3V
IC701
DAD1000
SCP_CLK
SCP_DO
SCP_DI
DADSELZ
SR16STROBE
SR16MODE1
SR16MODE0
SR16SEL1
SR16SEL0
SR16ADDR3
SR16ADDR2
SR16ADDR1
SR16ADDR0
DO NOT INSTALL
Configure for correct address
Default is 00
EXT_ARSTZ
SR16OEZ
MBRST(0:15)
DADINTZ
(IRQ TO HOST)
V-OFFSET
VCC2
(4.25V ~ 8.25V)
V5REG
VBIAS
V-BIAS
(18.5V ~ 26.5V)
(-26.5V ~ -18.5V)
VRST
V-RESET
(1A)
(12V)
L701
L702
DO NOT INSTALL
USE SN74LVC1G126DBV
IC809
IC810
IC811
PWM0
PWM1
PWM2
PWM0_OUT
PWM1_OUT
PWM2_OUT
ASIC_READY
NORMAL C/W(R720)
INSTALL
TO USE LARGE C/W
DO NOT INSTALL
D12V
D5V
IC703
MC33375ST-2.5T3
Q701
MMBT2222ALT1
Q702
MMBT2222ALT1
Q703
MMBT2907AWT1
CN701
(FOR TEST ONLY)
FET ON
RAMP
NOT REQUIRED FOR SMALL COLOR WHEELS.
(SEE CUSTOMER ENGINEERING)
IC704
A8904SLB
IC805
SN74LVC1G14DBVR
IC806
SN74LVC1G17
OCLKB
PWMACC
RESET
DO NOT INSTALL
DDP_CWINDEX
MTRSELZ
MTRCLK
MTRDATA
CWTACH
EXT_ARSTZ
D705
D706
D707
D708
BAT54SW
CN702

7-5-5 DMD

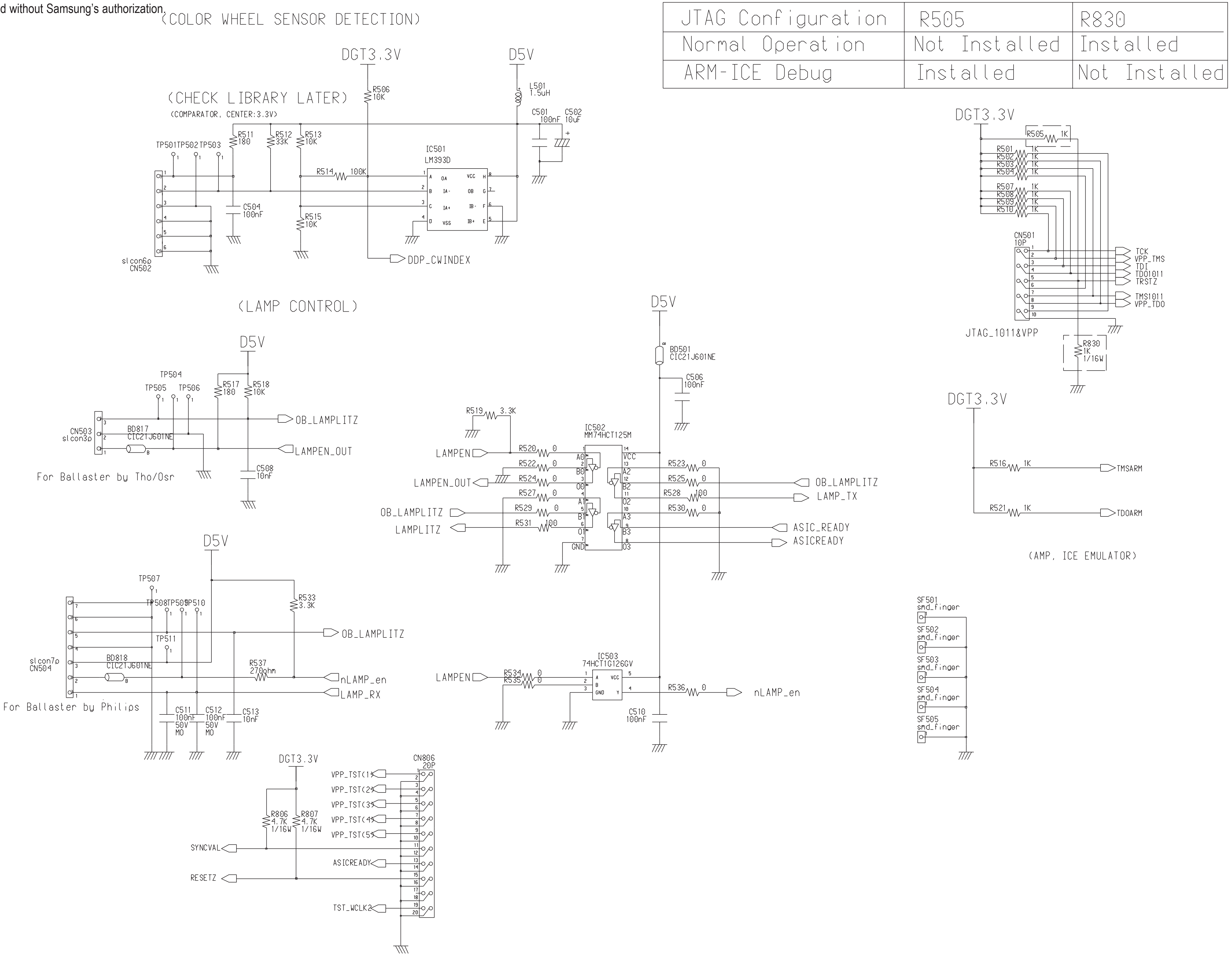
This Document can not be used without Samsung's authorization.


DGT3.3V
(POWER PLANE)
BD101
CIB31P600NE
C105
100nF
C138
1nF
C101 C102 C103 C104
10.000000 N
C106 C107 C108 C109 C110 C111 C112 C113 C114 C115 C116 C117 C118 C119 C120 C121
100nF
(30 MICRO INCHES OF ELECTROLYTIC GOLD OVER 150 MICRO INCHES OF ELECTROLYTIC NICKEL FOR DMD)
(5~15 MICRO INCHES OF ELECTROLYTIC GOLD OVER 150 MICRO INCHES OF ELECTROLYTIC NICKEL EXCEPT DMD)
(PAIR, SAME LENGTH, 100 OHM IMPEDANCE)
DDAN(0:15)
DDAP(0:15)
(A1 -> GND)
(200MHz)
DCLKAP
DCLKAN
SCTLAP
SCTLAN
SCP0_DO
R108 33
SCPDO
C150 0.027nF
SCP0_CLK
R110 33
SCPCLK
C151 0.027nF
DMD_SELZ
R112 33
DMDSELZ
C152 0.027nF
DMD_RSTZ
R113 33
DMDRSTZ
C153 0.027nF
TP101
TP102
TP103
TP104
SCPCLK
SCPDO
SCP0_DI
DMDSELZ
DMDRSTZ
R104 33
R105 0
R106 0
TP107
IC101
DMD
TP105
TP106
MBRST(0:15)
TP108
TP109
TP110
TP111
TP112
TP113
MMSZ5237B
D110
C141 C142 C143 C144 C145
100nF
(3.3uF/16V oscon) (POWER PLANE)
C139
10.000000
N
C140
100nF
BD812
CIB31P600NE
VCC2
(POWER TRACE)
C149
1nF
DCLKBP
DCLKBN
SCTLBP
SCTLBN
(200MHz)
DDBP(0:15)
DDBN(0:15)
(PAIR, SAME LENGTH, 100 OHM IMPEDANCE)

7-5-6 CW

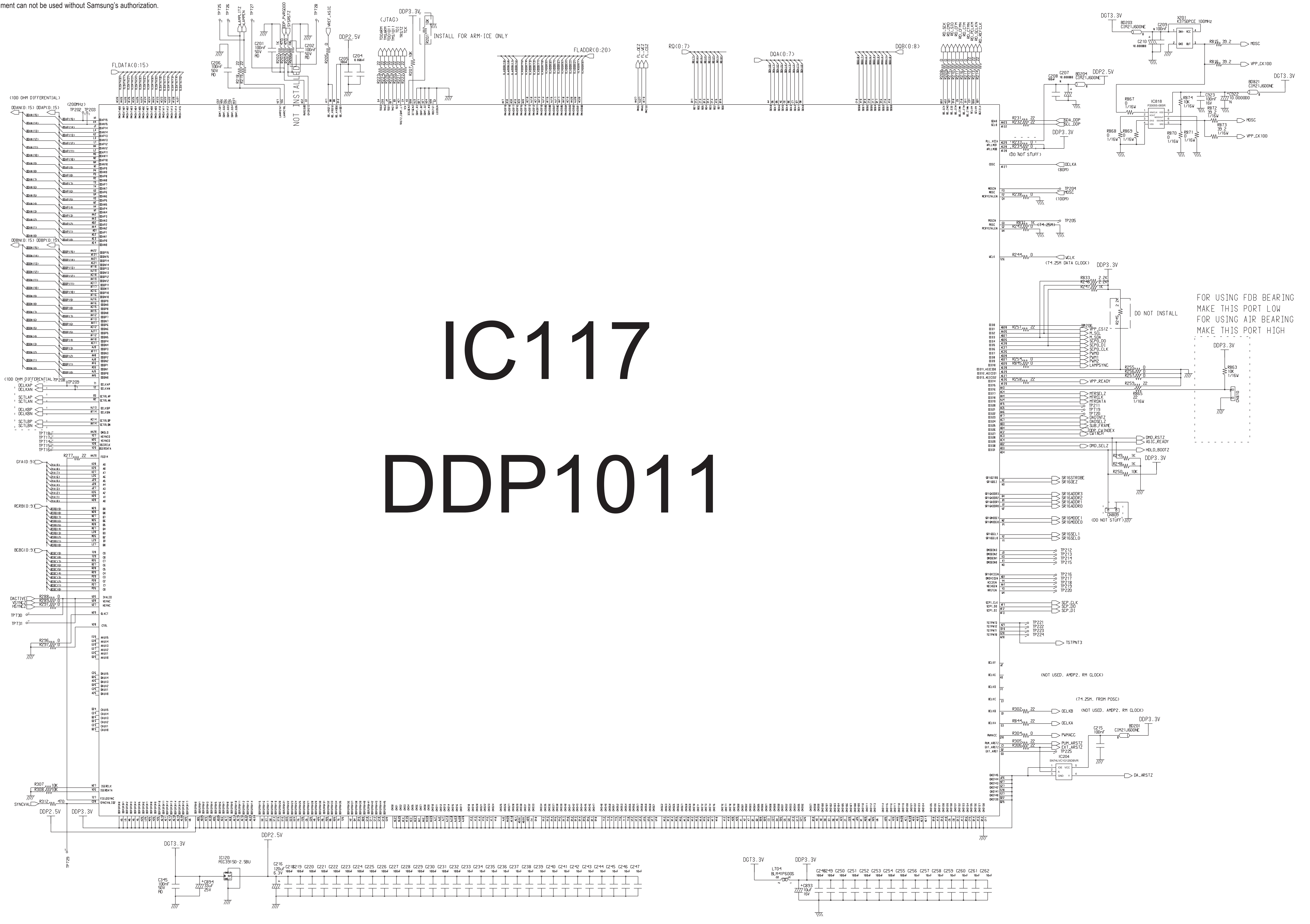
This Document can not be used without Samsung's authorization.

JTAG Configuration	R505	R830
Normal Operation	Not Installed	Installed
ARM-ICE Debug	Installed	Not Installed


(COLOR WHEEL SENSOR DETECTION)
DGT3.3V
D5V
(CHECK LIBRARY LATER)
(COMPARATOR, CENTER:3.3V)
R506 10K
L501 1.5uH
C501 100nF
C502 10uF
TP501 TP502 TP503
R511 180
R512 33K
R513 10K
R514 100K
IC501 LM393D
C504 100nF
R515 10K
slcon6p CN502
DDP_CWINDEX
(LAMP CONTROL)
D5V
TP504 TP505 TP506
R517 180
R518 10K
CN503 slcon3p
BD817 CIC21J601NE
OB_LAMPLITZ
LAMPEN_OUT
C508 10nF
For Ballaster by Tho/Osr
D5V
TP507 TP508 TP509 TP510 TP511
R533 3.3K
slcon7p CN504
BD818 CIC21J601NE
R537 270ohm
OB_LAMPLITZ
nLAMP_en
LAMP_RX
For Ballaster by Philips
C511 100nF 50V MO
C512 100nF 50V MO
C513 10nF
DGT3.3V
CN806 20P
R806 4.7K 1/16W
R807 4.7K 1/16W
VPP_TST(1)
VPP_TST(2)
VPP_TST(3)
VPP_TST(4)
VPP_TST(5)
SYNCVAL
ASICREADY
RESETZ
TST_WCLK2
D5V
BD501 CIC21J601NE
C506 100nF
R519 3.3K
IC502 MM74HCT125M
LAMPEN
LAMPEN_OUT
OB_LAMPLITZ
LAMPLITZ
R520 0
R522 0
R524 0
R527 0
R529 0
R531 100
R523 0
R525 0
R528 100
R530 0
OB_LAMPLITZ
LAMP_TX
ASIC_READY
ASICREADY
IC503 74HCT1G126GV
LAMPEN
R534 0
R535 0
R536 0
nLAMP_en
C510 100nF
DGT3.3V
R505 1K
R501 1K
R502 1K
R503 1K
R504 1K
R507 1K
R508 1K
R509 1K
R510 1K
CN501 10P
TCK
VPP_TMS
TDI
TDO1011
TRSTZ
TMS1011
VPP_TDO
JTAG_1011&VPP
R830 1K 1/16W
DGT3.3V
R516 1K
TMSARM
R521 1K
TDOARM
(AMP, ICE EMULATOR)
SF501 smd_finger
SF502 smd_finger
SF503 smd_finger
SF504 smd_finger
SF505 smd_finger

7-5-7 DDP1011

This Document can not be used without Samsung's authorization.

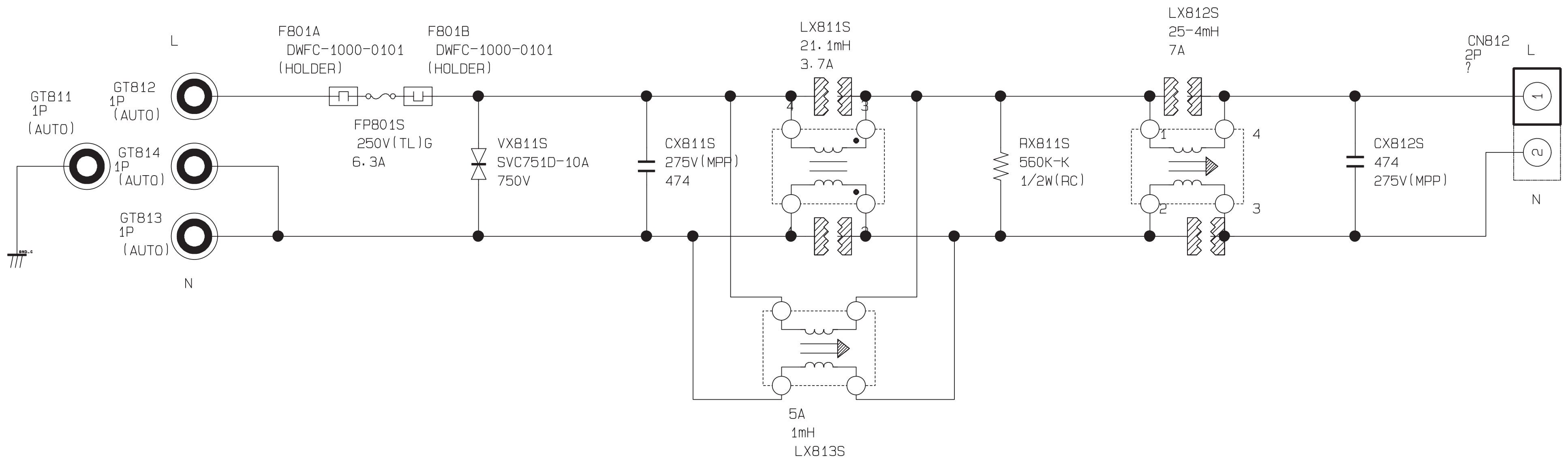

IC117
DDP1011
FLDATA(0:15)
FLADDR(0:20)
RQ(0:7)
DQA(0:7)
DQB(0:8)
(JTAG)
DDP3.3V
DDP2.5V
DGT3.3V
INSTALL FOR ARM-ICE ONLY
NOT INSTALL
(100 OHM DIFFERENTIAL)
(200MHz)
DDAN(0:15) DDAP(0:15)
DDBN(0:15) DDBP(0:15)
DCLKAP
DCLKAN
SCTLAP
SCTLAN
DCLKBP
DCLKBN
SCTLBP
SCTLBN
GYA(0:9)
RCRB(0:9)
BCBC(0:9)
DACTIVE
VSYNC
HSYNC
SYNCVAL
TP730
TP731
SDA_DDP
SCL_DDP
(DO NOT STUFF)
DCLKA
(80M)
TP204
MOSC
(100M)
TP205
(74.25M)
WCLK
(74.25M DATA CLOCK)
DO NOT INSTALL
FOR USING FDB BEARING
MAKE THIS PORT LOW
FOR USING AIR BEARING
MAKE THIS PORT HIGH
VPP_READY
DMD_RSTZ
ASIC_READY
HOLD_BOOTZ
DMD_SELZ
SR16STROBE
SR16OEZ
SR16ADDR3
SR16ADDR2
SR16ADDR1
SR16ADDR0
SR16MODE1
SR16MODE0
SR16SEL1
SR16SEL0
SCP_CLK
SCP_DO
SCP_DI
TSTPNT3
(NOT USED, AMDP2, RM CLOCK)
(74.25M, FROM POSC)
DCLKB
DCLKA
PWMACC
PUM_ARSTZ
EXT_ARSTZ
TP225
IC204
DA_ARSTZ
X201
KST50PCE 100MHz
IC818
VPP_CK100
BD201
CIM21J600NE
IC120
MIC39150-2.5BU
L704
BLM41P600S

7-6 Line Filter

This Document can not be used without Samsung's authorization.

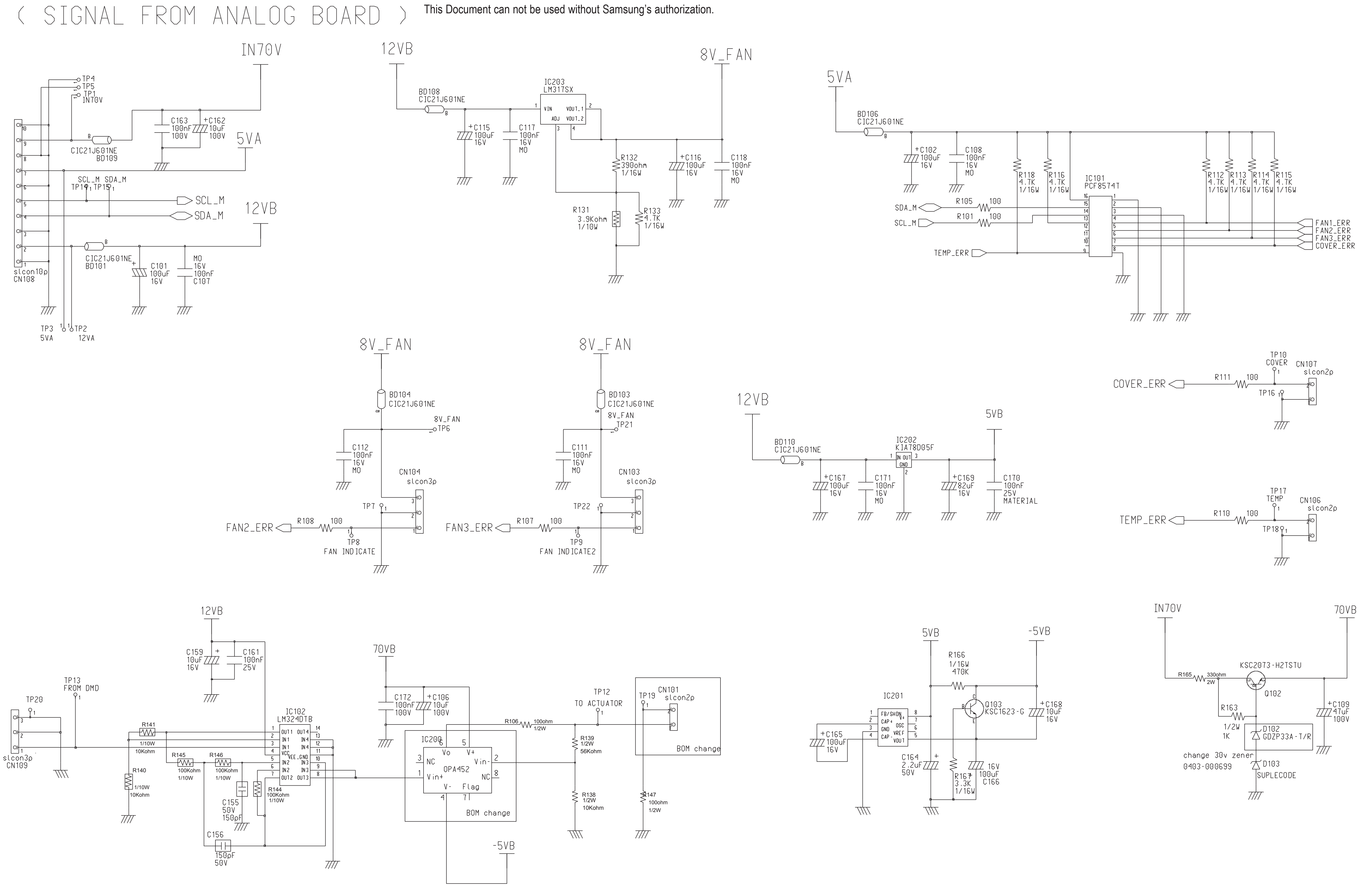
This drawing is property of SEC
Use or copy of this drawing without proper permission from the appropriate
technical-document managing department is prohibited.

LINE-FILTER


L
F801A
DWFC-1000-0101
(HOLDER)
F801B
DWFC-1000-0101
(HOLDER)
LX811S
21.1mH
3.7A
LX812S
25-4mH
7A
CN812
2P
?
L
GT811
1P
(AUTO)
GT812
1P
(AUTO)
GT814
1P
(AUTO)
GT813
1P
(AUTO)
GND_C
N
FP801S
250V(TL)G
6.3A
VX811S
SVC751D-10A
750V
CX811S
275V(MPP)
474
4
3
RX811S
560K-K
1/2W(RC)
1
4
2
3
CX812S
474
275V(MPP)
1
2
N
5A
1mH
LX813S

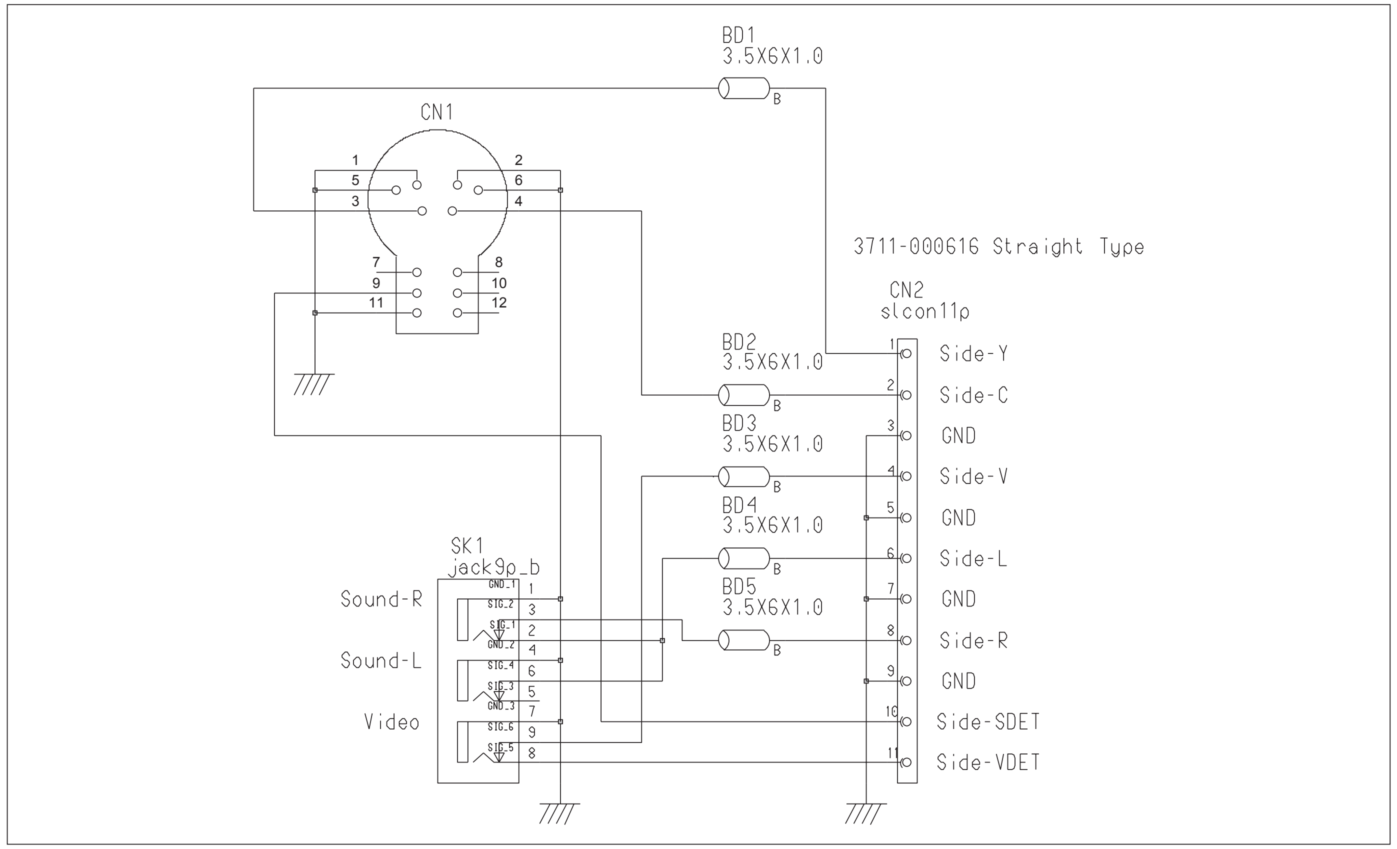
7-7 Actuator Driver and Sub Detector Board

This Document can not be used without Samsung's authorization.


(SIGNAL FROM ANALOG BOARD)
IN70V
12VB
8V_FAN
5VA
TP4
TP5
TP1 IN70V
C163 100nF 100V
C162 10uF 100V
CIC21J601NE BD109
SCL_M SDA_M
TP14 TP15
SCL_M
SDA_M
CIC21J601NE BD101
C101 100uF 16V
MO 16V 100nF C107
slcon10p CN108
TP3 5VA
TP2 12VA
BD108 CIC21J601NE
IC203 LM317SX
VIN VOUT_1 ADJ VOUT_2
C115 100uF 16V
C117 100nF 16V MO
R132 390ohm 1/16W
C116 100uF 16V
C118 100nF 16V MO
R131 3.9Kohm 1/10W
R133 4.7K 1/16W
BD106 CIC21J601NE
C102 100uF 16V
C108 100nF 16V MO
R118 4.7K 1/16W
R116 4.7K 1/16W
IC101 PCF8574T
R112 4.7K 1/16W
R113 4.7K 1/16W
R114 4.7K 1/16W
R115 4.7K 1/16W
R105 100
R101 100
TEMP_ERR
FAN1_ERR
FAN2_ERR
FAN3_ERR
COVER_ERR
BD104 CIC21J601NE
8V_FAN TP6
C112 100nF 16V MO
CN104 slcon3p
TP7
FAN2_ERR
R108 100
TP8 FAN INDICATE
BD103 CIC21J601NE
8V_FAN TP21
C111 100nF 16V MO
CN103 slcon3p
TP22
FAN3_ERR
R107 100
TP9 FAN INDICATE2
BD110 CIC21J601NE
IC202 KIA78D05F
IN OUT GND
5VB
C167 100uF 16V
C171 100nF 16V MO
C169 82uF 16V
C170 100nF 25V MATERIAL
TP10 COVER
CN107 slcon2p
COVER_ERR
R111 100
TP16
TP17 TEMP
CN106 slcon2p
TEMP_ERR
R110 100
TP18
C159 10uF 16V
C161 100nF 25V
TP13 FROM DMD
TP20
slcon3p CN109
R141 1/10W 10Kohm
R140 1/10W 10Kohm
IC102 LM324DTB
OUT1 IN1 IN1 VCC IN2 IN2 OUT2 OUT4 IN4 IN4 VEE_GND IN3 IN3 OUT3
R145 100Kohm 1/10W
R146 100Kohm 1/10W
R144 100Kohm 1/10W
C155 50V 150pF
C156 150pF 50V
70VB
C172 100nF 100V
C106 10uF 100V
IC200
OPA452
Vo V+ NC Vin- Vin+ V- Flag NC
BOM change
-5VB
R106 100ohm 1/2W
TP12 TO ACTUATOR
R139 1/2W 56Kohm
R138 1/2W 10Kohm
TP19
CN101 slcon2p
R147 100ohm 1/2W
BOM change
5VB
-5VB
R166 1/16W 470K
IC201
FB/SHDN CAP+ GND CAP- V+ OSC VREF VOUT
Q103 KSC1623-G
C168 10uF 16V
C165 100uF 16V
C164 2.2uF 50V
R167 3.3K 1/16W
16V 100uF C166
IN70V
70VB
R165 330ohm 2W
KSC2073-H2TSTU
Q102
R163 1/2W 1K
D102 GDZP33A-T/R
C109 47uF 100V
change 30v zener
0403-000699
D103
SUPLECODE

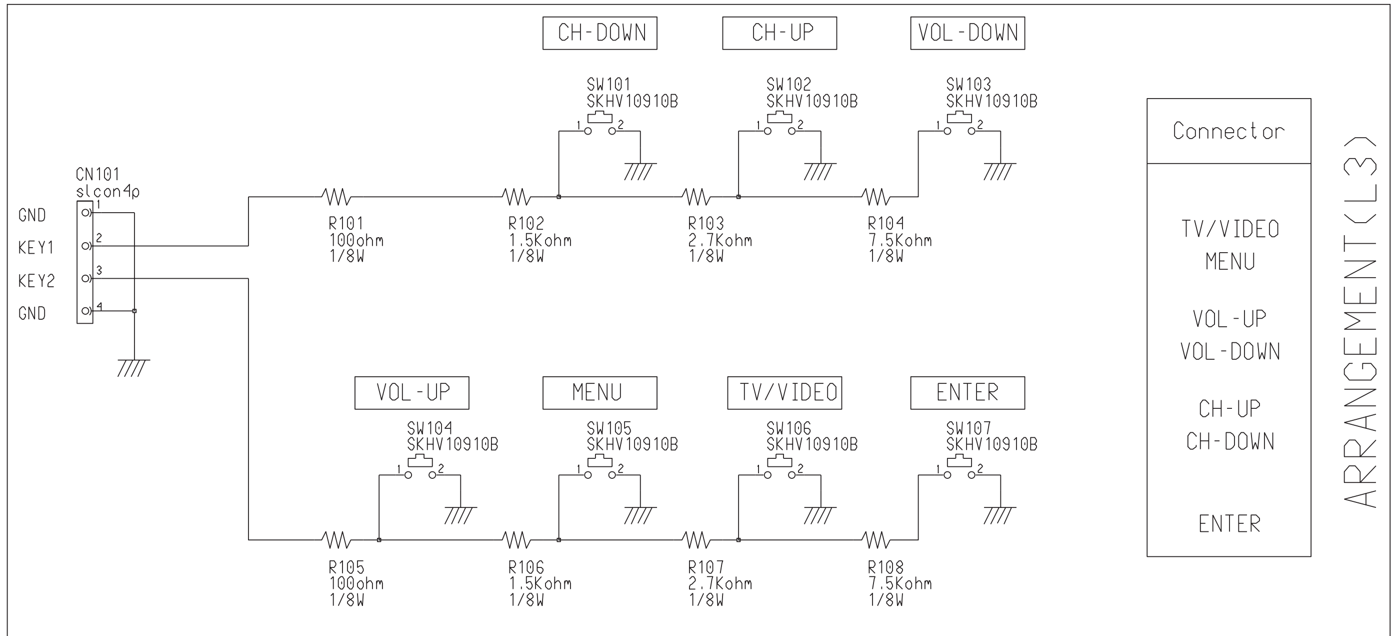
7-8 SIDE-AV

This Document can not be used without Samsung's authorization.


BD1
3.5X6X1.0
CN1
1
2
5
6
3
4
7
8
9
10
11
12
3711-000616 Straight Type
CN2
slcon11p
BD2
3.5X6X1.0
BD3
3.5X6X1.0
BD4
3.5X6X1.0
BD5
3.5X6X1.0
B
Side-Y
Side-C
GND
Side-V
GND
Side-L
GND
Side-R
GND
Side-SDET
Side-VDET
SK1
jack9p_b
Sound-R
Sound-L
Video
GND_1
SIG_2
SIG_1
GND_2
SIG_4
SIG_3
GND_3
SIG_6
SIG_5

7-9 Key Control

This Document can not be used without Samsung's authorization.

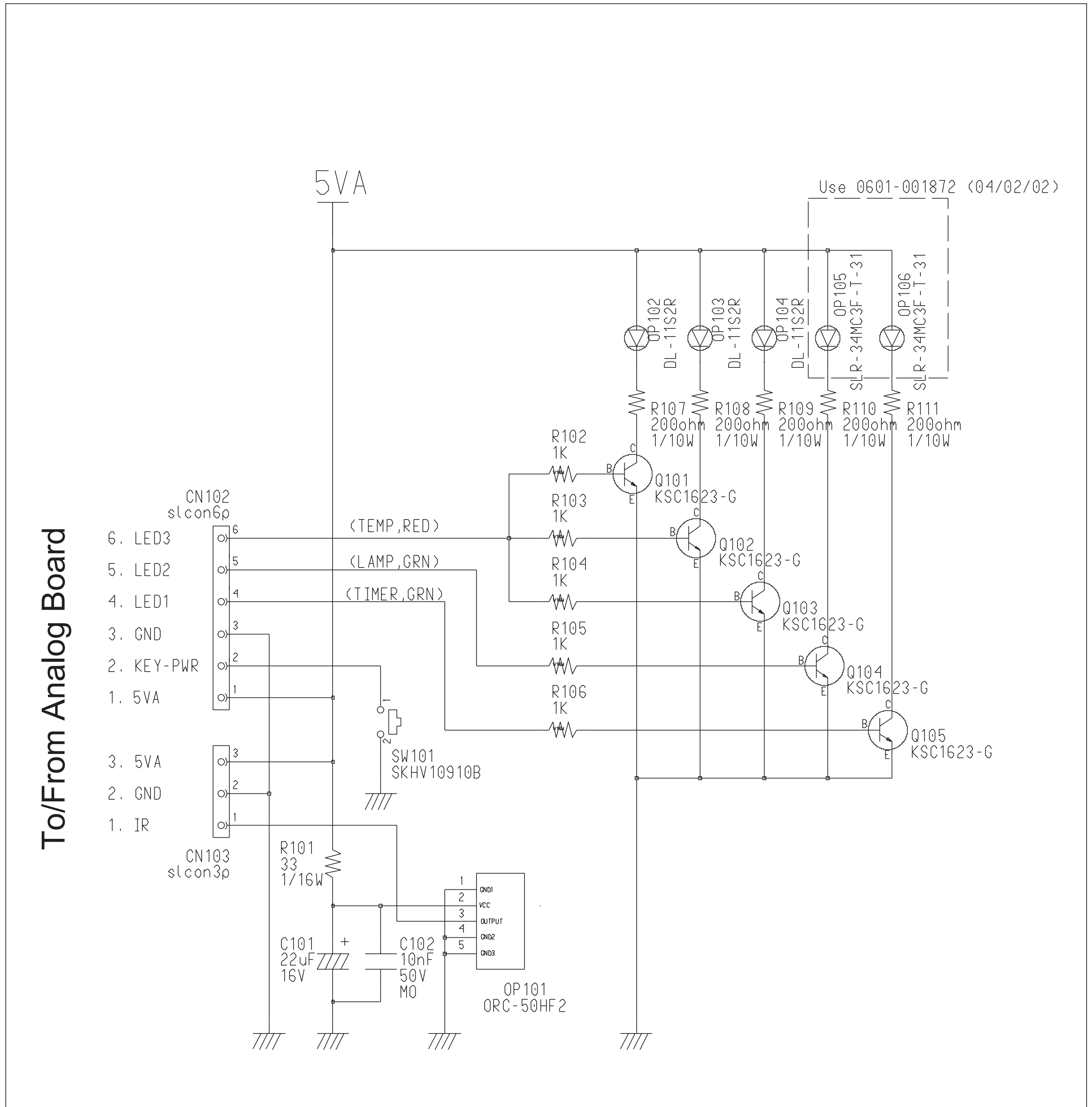

CH-DOWN
CH-UP
VOL-DOWN
SW101
SKHV10910B
SW102
SKHV10910B
SW103
SKHV10910B
CN101
slcon4p
GND
KEY1
KEY2
GND
R101
100ohm
1/8W
R102
1.5Kohm
1/8W
R103
2.7Kohm
1/8W
R104
7.5Kohm
1/8W
VOL-UP
MENU
TV/VIDEO
ENTER
SW104
SKHV10910B
SW105
SKHV10910B
SW106
SKHV10910B
SW107
SKHV10910B
R105
100ohm
1/8W
R106
1.5Kohm
1/8W
R107
2.7Kohm
1/8W
R108
7.5Kohm
1/8W
Connector
TV/VIDEO
MENU
VOL-UP
VOL-DOWN
CH-UP
CH-DOWN
ENTER
ARRANGEMENT(L3)

Key-Control Schematic Diagram

V0.4 : PCB Board Spec, Resister Value & Key Spec Change

7-10 RMC LED

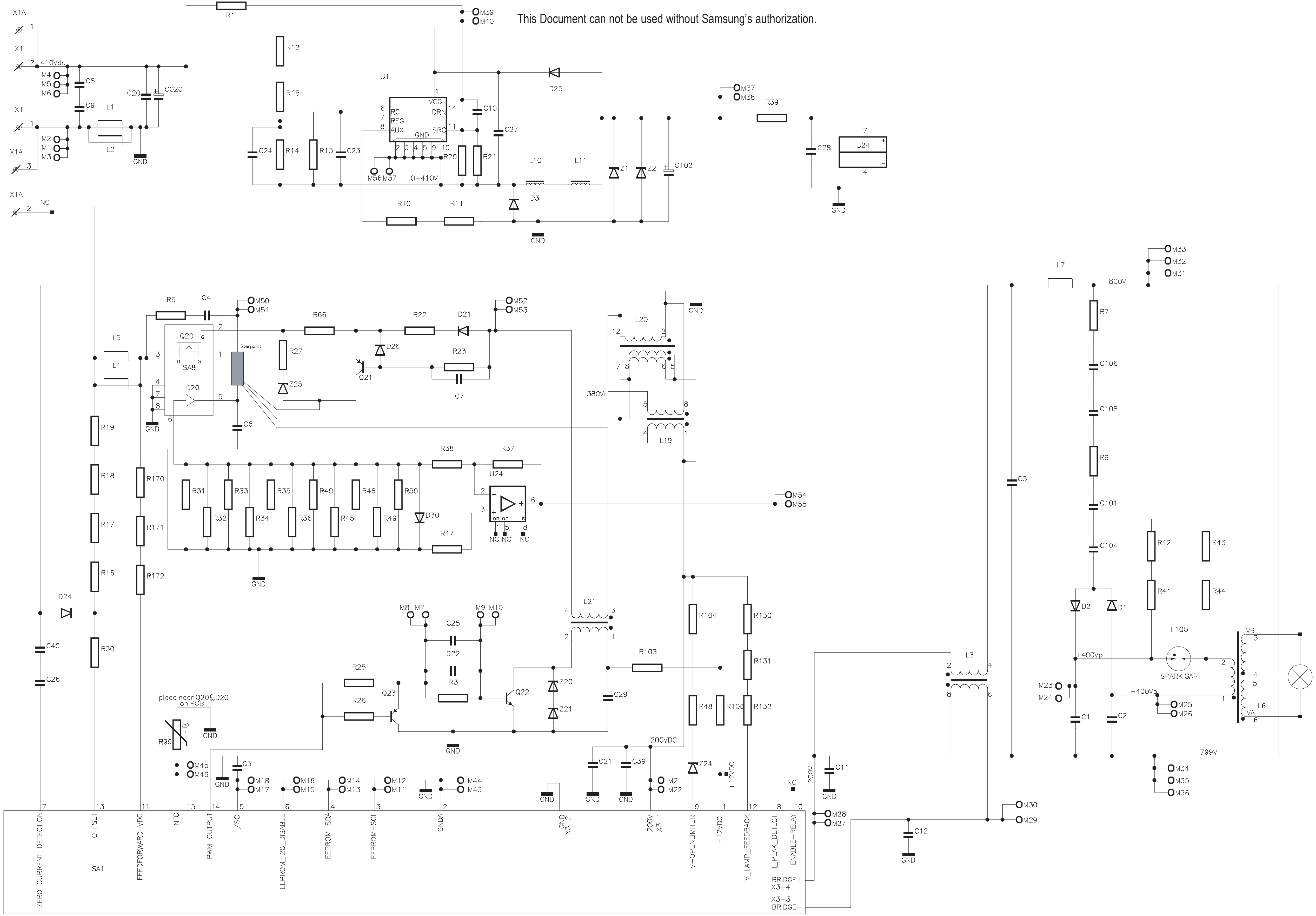
This Document can not be used without Samsung's authorization.


5VA
Use 0601-001872 (04/02/02)
OP102
DL-11S2R
OP103
DL-11S2R
OP104
DL-11S2R
OP105
SLR-34MC3F-T-31
OP106
SLR-34MC3F-T-31
R107
200ohm
1/10W
R108
200ohm
1/10W
R109
200ohm
1/10W
R110
200ohm
1/10W
R111
200ohm
1/10W
R102
1K
Q101
KSC1623-G
R103
1K
Q102
KSC1623-G
R104
1K
Q103
KSC1623-G
R105
1K
Q104
KSC1623-G
R106
1K
Q105
KSC1623-G
CN102
slcon6p
6. LED3
5. LED2
4. LED1
3. GND
2. KEY-PWR
1. 5VA
(TEMP,RED)
(LAMP,GRN)
(TIMER,GRN)
SW101
SKHV10910B
3. 5VA
2. GND
1. IR
CN103
slcon3p
R101
33
1/16W
C101
22uF
16V
C102
10nF
50V
MO
GND1
VCC
OUTPUT
GND2
GND3
OP101
ORC-50HF2
To/From Analog Board

Sub-Front Circuit

V0.4 : Connection Change

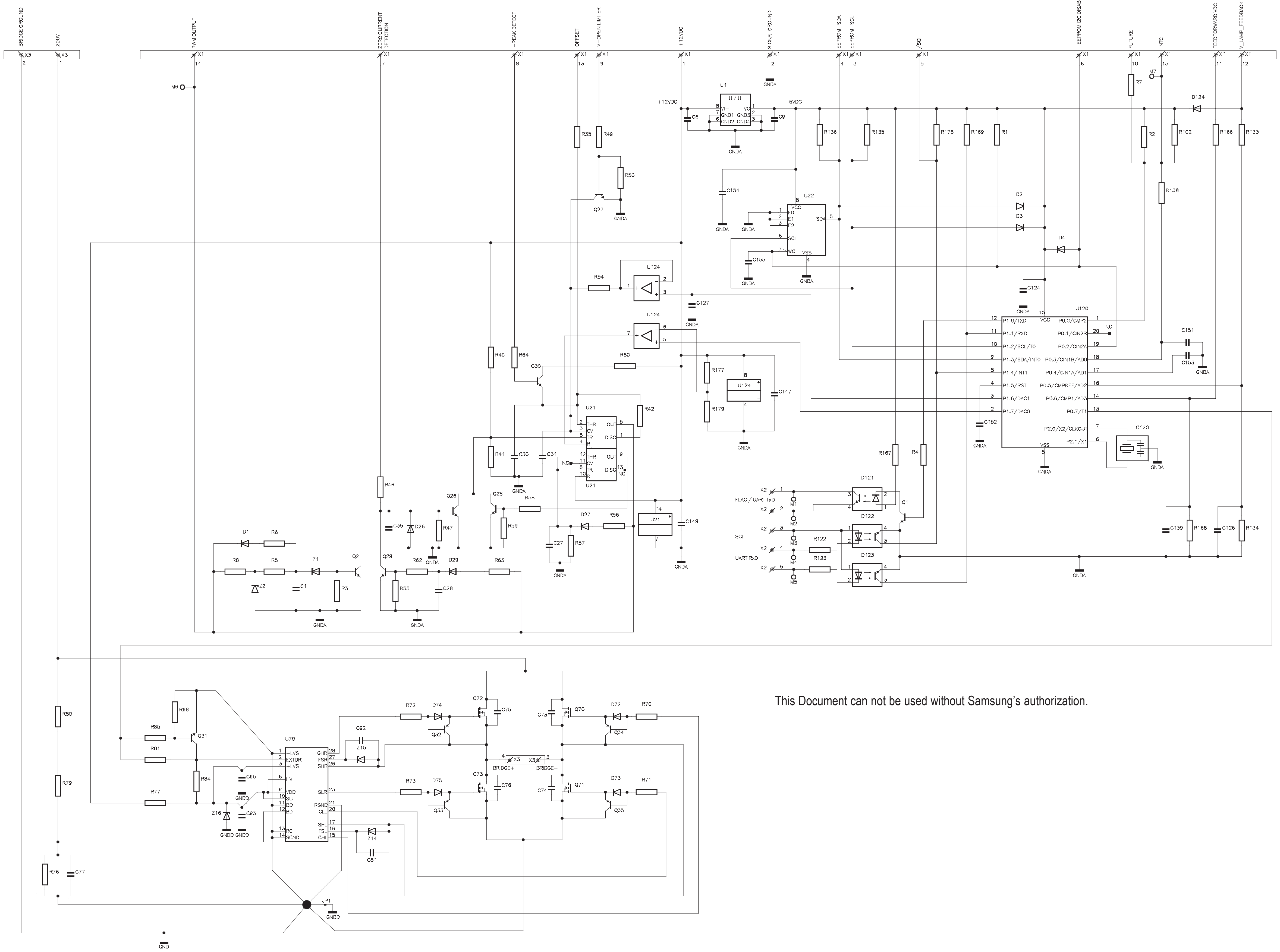
7-11 Ballast



This Document can not be used without Samsung's authorization.

X1A
X1
410Vdc
M4
M5
M6
C8
C9
L1
L2
C20
C020
M2
M1
M3
GND
NC
R1
M39
M40
R12
R15
R14
C24
R13
C23
U1
RC
REG
AUX
VCC
DRN
SRC
GND
M56
M57
0-410V
R20
R21
C10
C27
D25
L10
L11
D3
R10
R11
Z1
Z2
C102
M37
M38
R39
C28
U24
L5
L4
R5
C4
M50
M51
Q20
SA8
Sterpoint
D20
R66
R22
D21
M52
M53
R27
Z25
D26
Q21
R23
C7
C6
L20
380Vr
L19
R19
R18
R17
R16
R30
R170
R171
R172
R31
R32
R33
R34
R35
R36
R40
R45
R46
R49
R50
D30
R38
R37
R47
U24
NC
M54
M55
D24
C40
C26
M8
M7
M9
M10
C25
C22
R3
R25
R26
Q23
Q22
Z20
Z21
L21
C29
R103
R104
R130
R131
R48
R106
R132
Z24
200VDC
C21
C39
M21
M22
+12VDC
place near Q20&D20 on PCB
R99
M45
M46
C5
M18
M17
M16
M15
M14
M13
M12
M11
M44
M43
L7
800V
M33
M32
M31
R7
C106
C108
R9
C101
C104
C3
R42
R43
R41
R44
D2
D1
F100
+400Vp
-400Vp
SPARK GAP
M23
M24
M25
M26
C1
C2
L3
VB
VA
L6
799V
M34
M35
M36
C11
200V
M30
M29
M28
M27
C12
ZERO_CURRENT_DETECTION
OFFSET
SA1
FEEDFORWARD_VDC
NTC
PWM_OUTPUT
/SCI
EEPROM_I2C_DISABLE
EEPROM-SDA
EEPROM-SCL
GNDA
GND X3-2
200V X3-1
V-OPENLIMITER
+12VDC
V_LAMP_FEEDBACK
I_PEAK_DETECT
ENABLE-RELAY
BRIDGE+ X3-4
X3-3 BRIDGE-

7-12 Combined Bridge and Control Module


BRIDGE GROUND
200V
PWM OUTPUT
ZERO CURRENT DETECTION
I-PEAK DETECT
OFFSET
V-OPEN LIMITER
+12VDC
SIGNAL GROUND
EEPROM-SDA
EEPROM-SCL
/SCI
EEPROM I2C DISABLE
FUTURE
NTC
FEEDFORWARD VDC
V_LAMP_FEEDBACK
X1
X3
GND
GNDA
GNDD
+5VDC
U1
U22
U120
U124
U21
U70
G120
D121
D122
D123
JP1
BRIDGE+
BRIDGE-
FLAG / UART TxD
SCI
UART RxD
NC

This Document can not be used without Samsung's authorization.